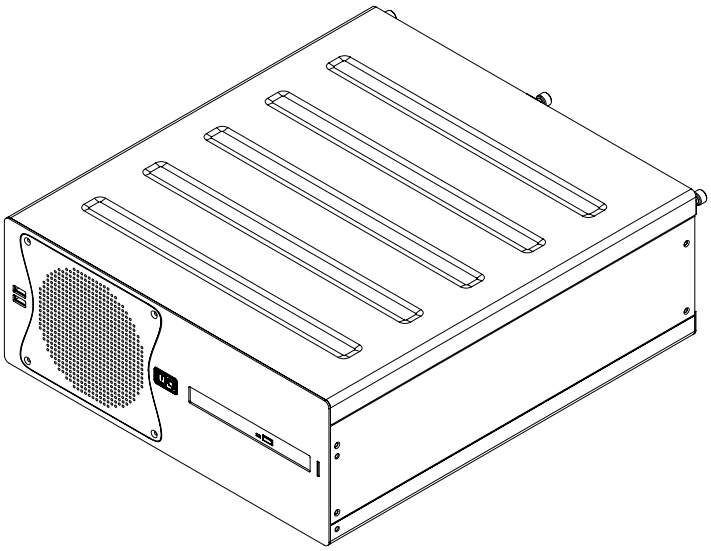
HATTELAND®
DISPLAY

USER MANUAL



HM C01 - Compact Rugged Naval Computer

HM C01 xxy-zzzz

xx = standard or custom
y = operating system
zzzz = configuration dependent

User Manual HM C01	
Updated: 16 Jun 2011	Doc Id: INB10042-3 (Rev 3)
Created: 363 Approved: 6987	

Please visit www.hatteland-display.com for the latest electronic version of this manual.

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Aamsosen, N-5578 Nedre Vats, Norway

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WARNING: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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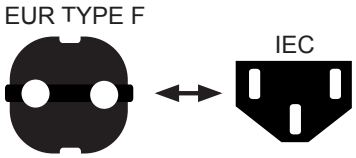
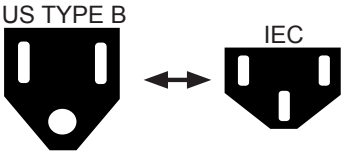
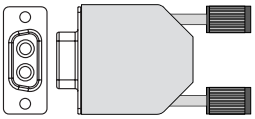
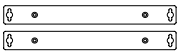
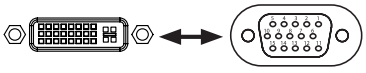
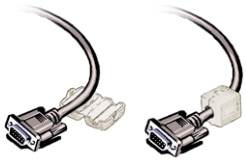
Contents of package

This product is shipped with:

Item	Description	Illustration
FS-CABLE EU	1 pcs of power cable European Type F “Schuko” to IEC. Length 1.8m **Note**: Only applicable for factory delivered units with AC Power Input	
80099	1 pcs of power cable US Type B plug to IEC. Length 1.8m **Note**: Only applicable for factory delivered units with AC Power Input	
FCE17-E2W2SS-2N0 & L17DPPK09JSU (cover)	1 pcs of DC Power Input housing with internal cable screw terminal. **Note**: Only applicable for factory delivered units with DC Power Input	
MEDIA STD01	1 pcs of Documentation and Driver DVD.	Menu and Driver browser for Microsoft® Windows®
 HT 00226 OPT-A1	Mounting brackets incl. screws (for console mounting)	
DVI-4	1 pcs of DVI-I > RGB/VGA adapter DVI-I 29P Male to DSUB 15P Female	
Würth 742 71x xx	Ferrites intended for the following cables: 16 pcs - Würth 742 711 12: USB, Audio, Keyboard, Mouse, COM 4 pcs - Würth 742 711 31: Ethernet 1 pcs - Würth 742 712 21: Parallel Must be mounted on cables to be fully compliant with type approvals. Review installation chapter for more information.	
	Test Reports papers: 1 pcs of Product Declaration 1 pcs of Computer Checklist 1 pcs of BurnInTest Certificate	

Package may also include: (based on accessories/options ordered)

Item	Description	Illustration
HT 00215 OPT-A1	Recovery Kit (USB Flash) For reverting back to factory/customized installations. **Note**: Only applicable for factory delivered units with HDD/SDD hardware.	Recovery Image (located on hidden partition on HDD/ SDD)
?	For computers that include 3rd party hardware; the package / accessories box may also include additional CD / HW / Information from 3rd party supplier(s).	

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General

About this manual

The manual contains electrical, mechanical and input/output signal specifications. All specifications in this manual, due to manufacturing, new revisions and approvals, are subject to change without notice. However, the last update and revision of this manual are shown both on the frontpage and also in the “Revision History” chapter at the end of the manual.

Furthermore, for third party datasheet and user manuals, please see dedicated Documentation and Driver DVD delivered with the product or contact our sales/technical/helpdesk personnel for support.

About Hatteland Display

Hatteland Display is the leading technology provider of specialized display and computer products, delivering high quality, unique and customized solutions to the international maritime, naval and industrial markets.

The company represents innovation and quality to the system integrators world wide. Effective quality assurance and investment in sophisticated in-house manufacturing methods and facilities enable us to deliver Type Approved and Mil tested products. Our customer oriented approach, technical knowledge and dedication to R&D, makes us a trusted and preferred supplier of approved solutions, which are backed up by a strong service network.

hatteland-display.com

You will find our website full of useful information to help you make an informed choice as to the right product for your needs. You will find detailed product descriptions and specifications for the entire range on offer be it Series 1, Series 2, Computers & Panel Computers, Military solutions as well as the range of supporting accessories. The site carries a wealth of information regarding our product testing and approvals in addition to company contact information for our various offices around the world, the global service centers and the technical help desk, all ensuring the best possible support wherever you, or your vessel, may be in the world.

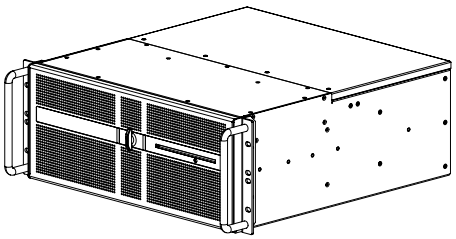
Contact Information

Head office, Vats / Norway: Hatteland Display AS Åmsosen N-5578 Nedre Vats, Norway Tel: +47 4814 2200 Fax: +47 5276 5444 mail@hatteland-display.com	**Sales office, Frankfurt / Germany:** Hatteland Display GmbH Werner Heisenberg Strasse 12, D-63263 Neu-Isenburg, Germany Tel: +49 6102 370 954 Fax: +49 6102 370 968
Sales office, Oslo / Norway: Solbråveien 20 N-1383 Asker Norway Tel: +47 4814 2200 Fax: +47 5276 5444	**Sales office, Aix-en-Provence / France:** Hatteland Display SAS 31 Parc du Golf, 350, Avenue JRGG de la Lauzière - CS 90519 13593 Aix-en-Provence Cedex 3, France Tel: +33 (0)4 42 16 35 15 Fax: +33 (0)4 42 16 35 09
Sales office, San Diego / USA: Hatteland Display Inc. 11440 W. Bernardo Court, Suite 300 San Diego, CA 92127, USA Tel: +1 858 753 1959 Fax: +1 858 430 2461	

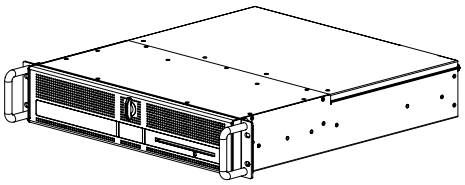
For an up-2-date list, please visit www.hatteland-display.com/locations

Computers introduction

Hatteland Display's range of type-approved computers is designed to perform in harsh environments while providing the performance and flexibility you expect. We offer rack mount and black box/standalone computer solutions for every need. Our computers are used by system integrators, boat builders and end-users and can be found on all vessel types, all over the world.

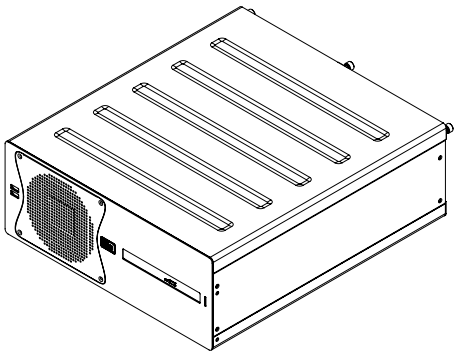


If you are looking for a high quality computer for navigation, monitoring or entertainment solutions, Hatteland Display can fulfil your high expectations at a reasonable cost.



Our computer range covers all eventualities and requirements. We offer a wide range of processor choices, HDD and power options, and solid state technology, neatly engineered within industry standard form factors such as 19" rack mount, 2U, 3U and 4U.

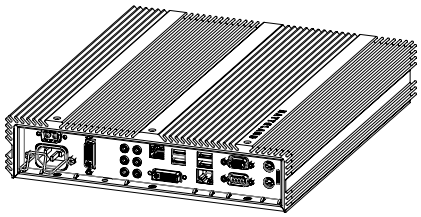
We continually develop our computers portfolio to make the best use of emerging computer technology so you can be sure that your Hatteland Display computer offers the power needed to run modern applications, with the flexibility to be installed wherever you want, for any marine use.



Designed to perform in harsh environments...

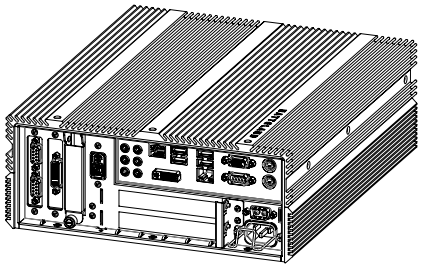
Winner of Red Dot awards 2009 / 2007

In 2009 the Hatteland Display HT C01 standalone computer won a prestigous Red Dot Award with Honourable Mention distinction, sucessfull detail solution.



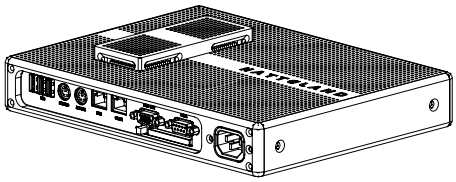
The Design Zentrum Nordrhein Westfalen in Germany has been marking outstanding international product design with its famous and highly regarded dot since 1955. The Red Dot Product Design Award is an annual international awards scheme where products from all industries are chosen for their innovative visual and industrial design.

In 2007 the Hatteland Display Series 2 Display/Panel Computers range won the Red Dot Award for the overall design and modular backpack concept, which docks into the screen at the back, comprises either the typical display connections or a fully equipped panel computer. Even the computer backpack can operate on its own as a stand-alone computer.

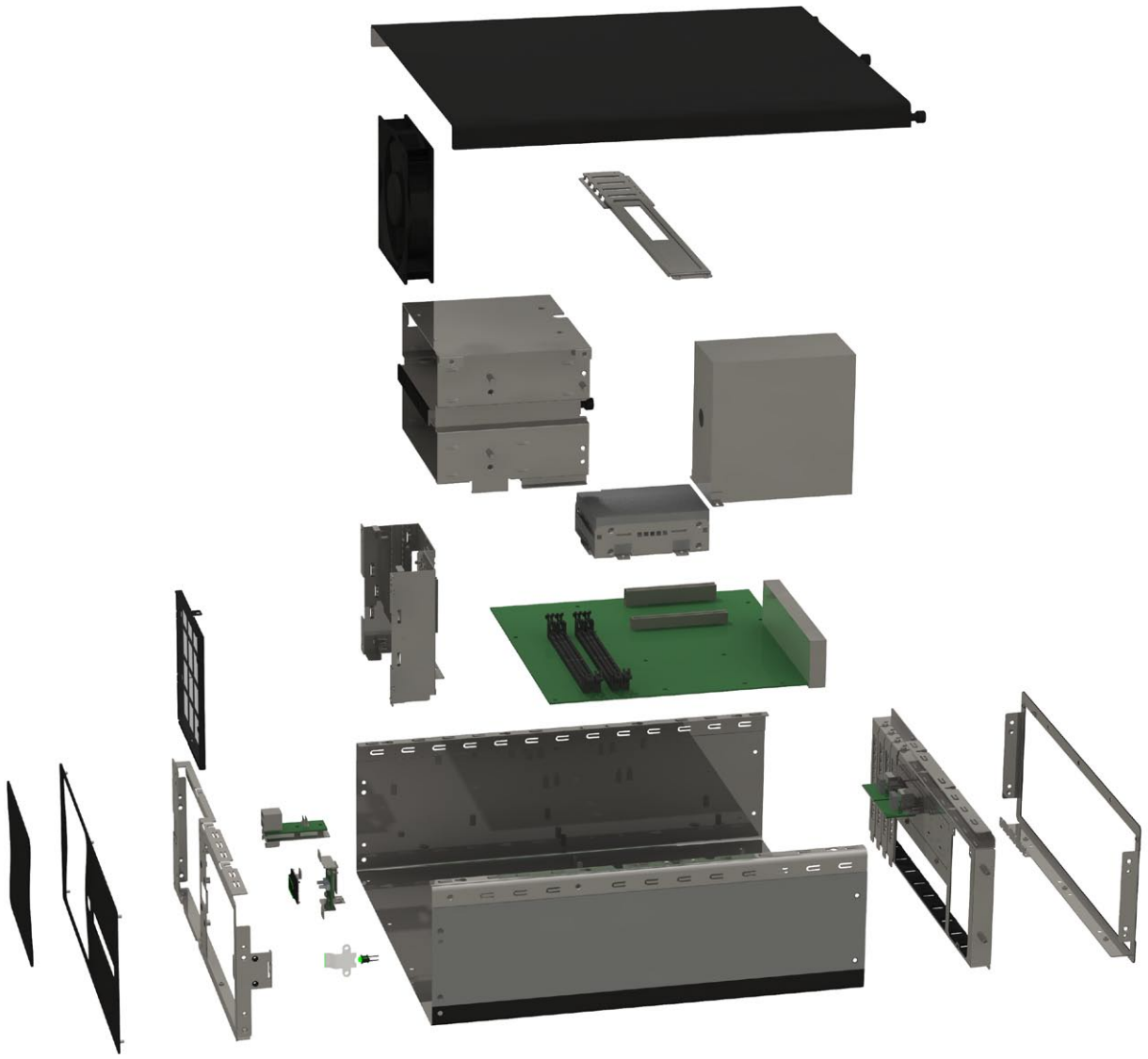


reddot design award
honourable mention 2009

reddot design award
winner 2007



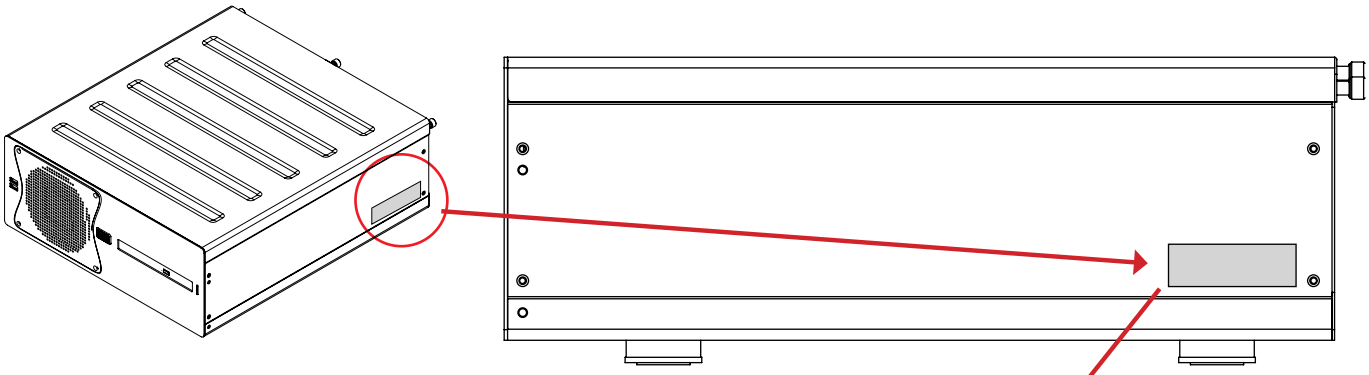
Exploded View



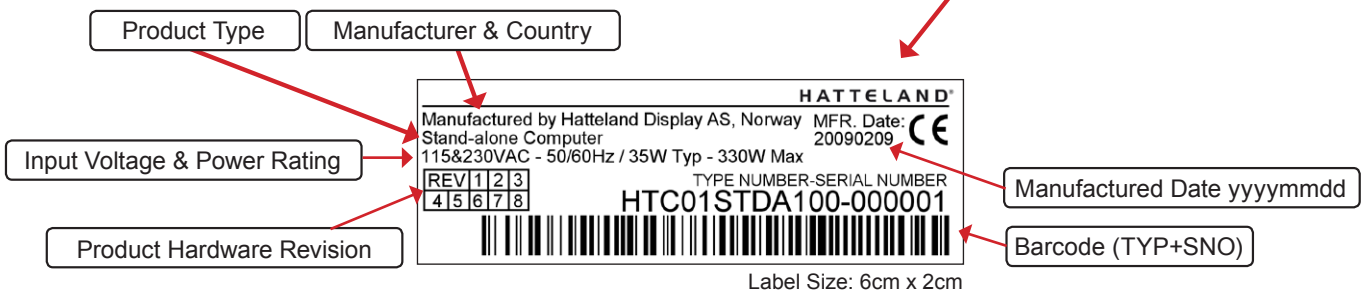
General illustration

Product Labels (Examples)

Serial Number Label Placement (external)



Serial Number Label Layout



Serial Number Label Nomenclature

```
AA XXX AAA-AXXX-XXXXXX  NOMENCLATURE - A=Letters, X=Numbers
HT C01 STD-A111-000005  Example
|| ||| ||| |||| ||||||
|| ||| ||| |||| ¤-----  Serial Number. Due to revisions, numbers may be 1 to 7 digits
|| ||| ||| |¤¤¤-------  Configuration ID (for components like memory, storage etc.)
|| ||| ||| ¤----------  Power Input ID (A=90-264VAC, D=24VDC)
|| ||| ||¤------------  Installed Operating System ID / No Installed OS ID
|| ||| ¤¤-------------  Abbreviation for Standard (STD) or reserved customer ID
|| ||¤----------------  Chassis Revision ID
|| |¤-----------------  Electronics / Mainboard / Technology Revision ID
|| ¤------------------  Chassis Type ID
|¤--------------------  Maritime Model (HT) or Naval Rugged Model (HM) ID
¤---------------------  Manufacturer ID
```

Product Labels (Examples)

Operating System Serial Number Label Placement (internal)

Please review the “General Installation Recommendations” chapter in this manual before proceeding.

Unscrew the 3 chassis screws (FIG 1), and slide the cover slightly (5mm/0.20”) (FIG 2) and lift the cover to reveal the label (FIG 3).

FIG1

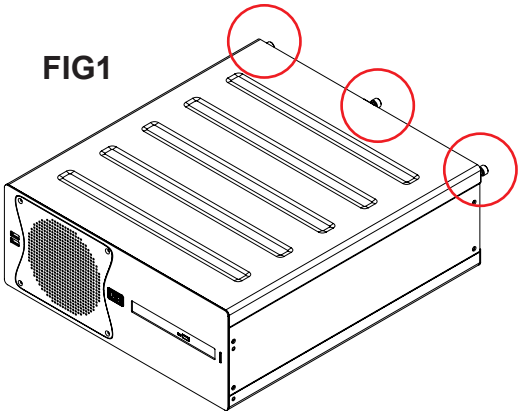


FIG2

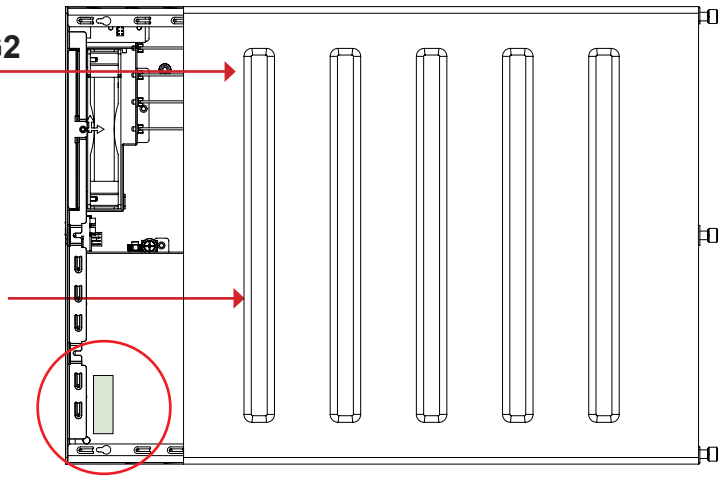


FIG3

Installation

General Installation Recommendations

Installation and mounting of computers

1. Units may be intended for various methods of installation or mounting (rack mounting, panel mounting, bracket mounting, ceiling/wall mounting); for details, please see the relevant mechanical drawings.
2. Adequate ventilation is a necessary prerequisite for the life of the unit. The air inlet and outlet openings must definitely be kept clear; coverings which restrict ventilation are not permissible. The product might be without any ventilation aperatures which means pt.2 does not apply.
3. Exposure to direct sunlight can cause a considerable increase in the temperature of the unit, and might under certain circumstances lead to overtemperature. This point should already be taken into consideration when the bridge equipment is being planned (sun shades, distance from the windows, ventilation, etc.)
4. Space necessary for ventilation, for cable inlets, for the operating procedures and for maintenance, must be provided.
5. To further improve the cooling of the unit we recommend installing Cooling Fans underneath blowing upwards into the unit air inlet. This may be required in high temperature applications and also when there is reason to expect temperature problems due to non-optimal way of mounting.
6. For DC powered computer units proper grounding must be achieved by connecting a wire from the unit's ground (GND) screw (as indicated on the unit with a ⏚ icon) to the grounding in your installation setup.

   The wire should have a cross sectional area of at least 6mm$^{2.}$ The GND screw is located near the other I/O connectors. Please review the "Physical Overview" chapter for further help.

General mounting instructions

1. The useful life of the components of all Electronics Units generally decreases with increasing ambient temperature; it is therefore advisable to install such units in air-conditioned rooms. If there are no such facilities, these rooms must at least be dry, adequately ventilated and kept at a suitable temperature in order to prevent the formation of condensation inside the unit.
2. With most Electronic Units, cooling takes place via the surface of the casing. The cooling must not be impaired by partial covering of the unit or by installation of the unit in a confined cabinet.
3. In the area of the wheel house, the distance of each electronics unit from the magnetic standard compass or the magnetic steering compass must not be less than the permitted magnetic protection distance. This distance is measured from the centre of the magnetic system of the compass to the nearest point on the corresponding unit concerned. The exact distance is often mentioned in the specific product specifications.
4. Transportation damage, even if apparently insignificant at first glance, must immediately be examined and be reported to the freight carrier. The moment of setting-to-work of the equipment is too late, not only for reporting the damage but also for the supply of replacements.

Cables

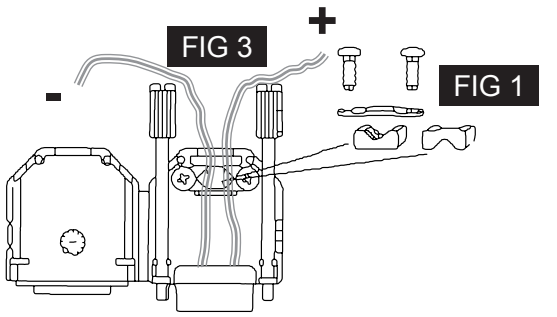
Use only high quality shielded signal cables. For RGB/DVI cables use only cables with separate coax for Red, Green and Blue.

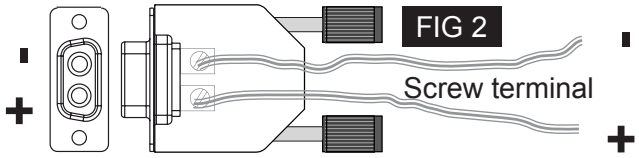
Configuring DC power input housing connector

Note: Only applicable for certain models!
For installations that require DC power input, use the provided 2-pin DC Power Input housing with internal cable screw terminal.

1: Open the housing
2: Unmount the fasteners. (FIG 1)
3: Mount power cables to screw terminal (FIG 2). Note polarity!
4: Secure the cable tightly with fasteners (FIG 3, FIG 1)
5: Close the housing

Note: Please check polarity before connecting any cables to the screw terminal.





General Installation Recommendations

CAUTION
This unit contains electrostatic sensitive devices.
Observe precautions for handling.

Computer Upgrade Precaution Note

Users who needs to open the computer to change PCI cards, install more memory, or set internal jumpers can do so without voiding the warranty. Before opening a unit's housing to remove or touch a board, proper ESD measurements must be taken!

1. Operator should ground himself by using a wrist band.

2. The wrist band should be connected to ground via a ground cord.

3. A one megaohm resistor, installed in the wrist connection end of the ground cord, is a safety requirement.

4. Alternatively an Static-dissipative ESD work mat could be positioned at the workplace. The 3M™ 8501 Portable Field Service Kit is a good choice for this purpose.

All assisting persons who might come into contact with the endangered boards must also use the ESD equipment.

Ferrites

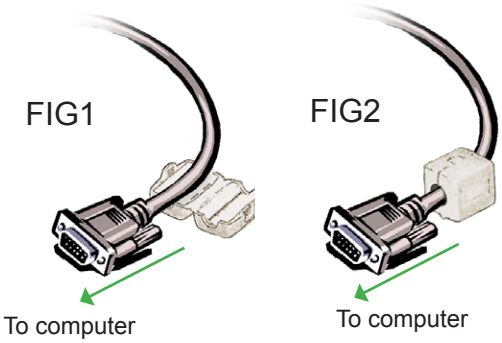
The ferrites prevent high frequency electrical noise (radio frequency interference) from exiting or entering the equipment. You can locate the loose ferrites (where applicable, check Contents of Package chapter in the user manual) in the Accessories box which are part of the main computer unit packaging. Some products have also factory mounted ferrites on internal connectors (where applicable).

The ferrites must be mounted on specificed cables to fully comply with the Type Approvals.

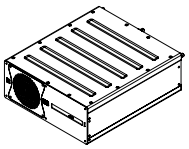
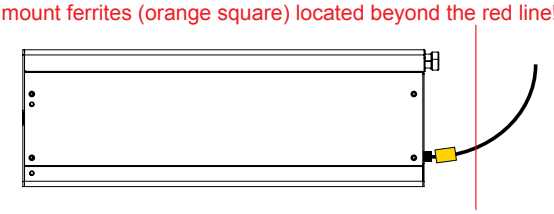
Step 1 / 2 : Preperation

The ferrites should be mounted (clipped in place on the cable) and located as close as possible to the connector piece that connects to the rear of computer (maximum length from computer connector is 5cm [1.97 inch]). See checklist below.

When ready: Open the ferrite, place the cable inside as shown in FIG1, and then gently close it until a click can be heard (FIG2). You may close and re-open them as many times as required during the installation.



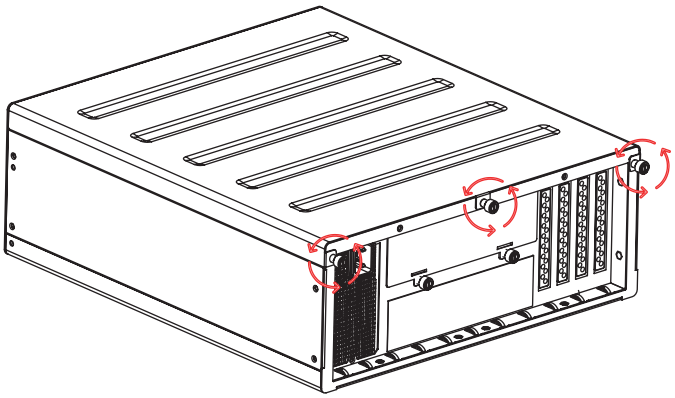
Step 2 / 2: Checklist

Typenumber	Ferrites for Cables	Dimetric View	Perferred distance / location of ferrites. Computer shows side view
HM C01 STx-D601 HM C01 STx-D602 x=Operating System	**16 x Würth 742 711 12:** For USB, Audio, COM, Keyboard and Mouse **4 x Würth 742 711 31:** For Ethernet **1 x Würth 742 712 21:** For Parallel		Red Line indicate 5cm [1.97 inch] limit from connector (black square). Do not mount ferrites (orange square) located beyond the red line!  Note: If you have many cables, mounting ferrites might have to be arranged as a alternating stair-step like pattern. This is to prevent clumps of ferrites that might apply tension to the connected connectors.

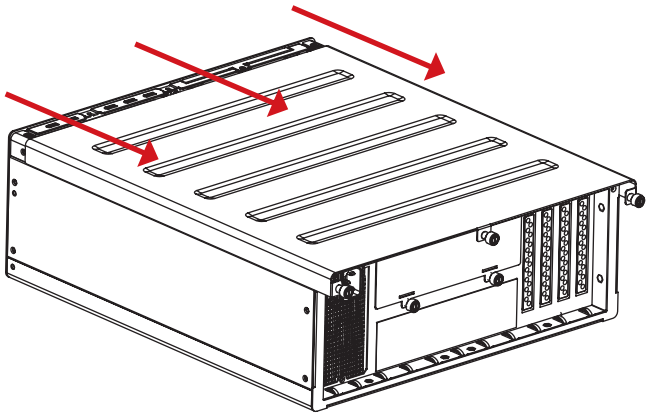
Cabinet cover removal

Note: Areas of interest are marked in this section with arrows in RED color. Please disconnect ALL cables from the computer unit before proceeding!

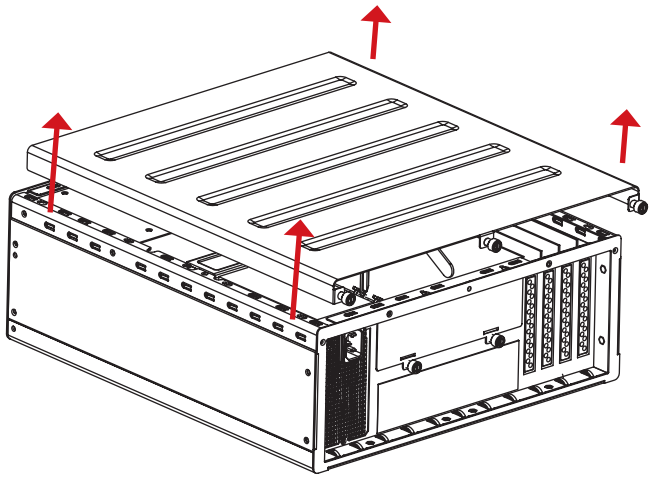
1: Unscrew 3 screws in rear of cabinet. Turn anti-clockwise using your fingers.



2: Push cover gently down while pushing forward approx 5mm [0.20”] away from the front and then lift the cover.

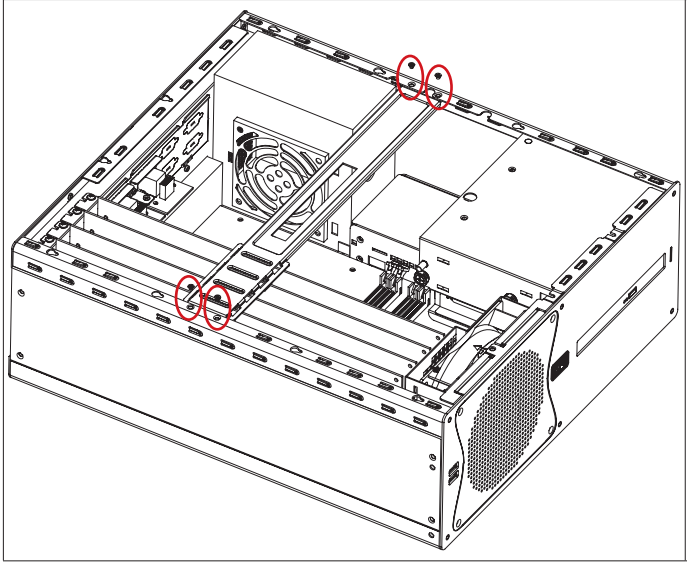
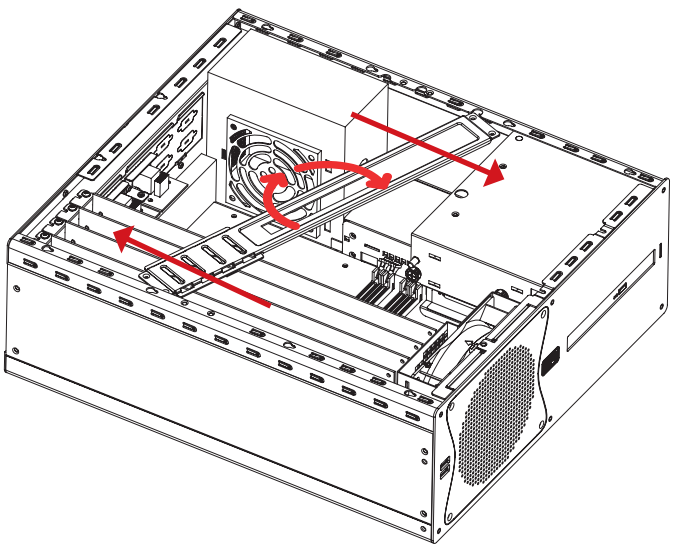


3: Lift the cover up with both hands. Repeat the procedure backwards to finalize operation.



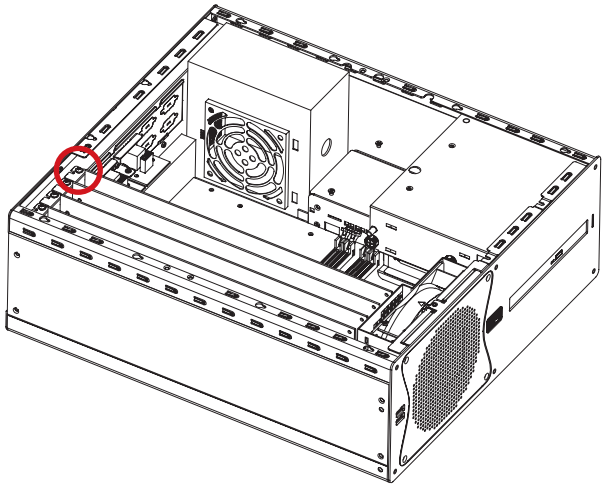
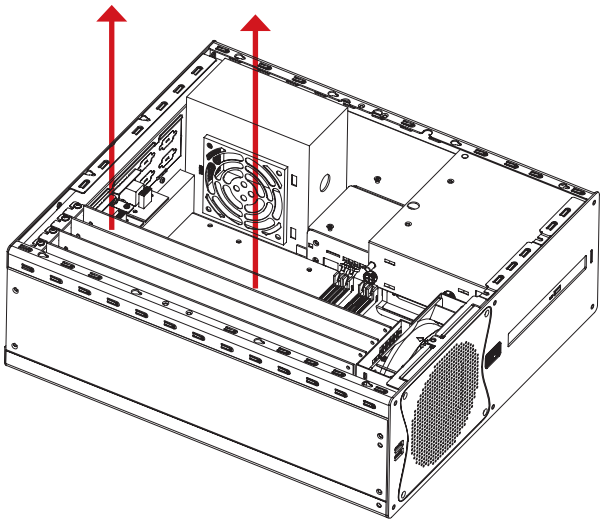
PCI Card removal / replacement - Introduction

Note: Areas of interest are marked in this section with circles and arrows in RED color. Please disconnect ALL cables from the computer unit before proceeding!

1: Unscrew 4 screws on each side of the bracket. Turn anti-clockwise using a Pozidriv #2 screwdriver.	2: Push each side of the bracket, one forward and one backwards in a 45 degree rotation clockwise to slide it out of the tracks. Then lift up the the bracket to remove it.
	

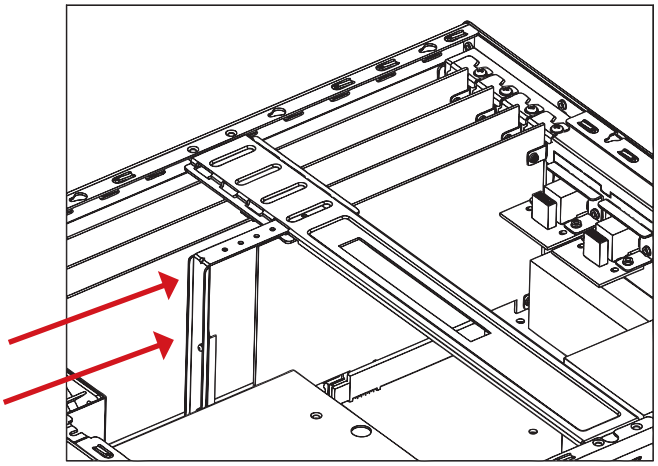
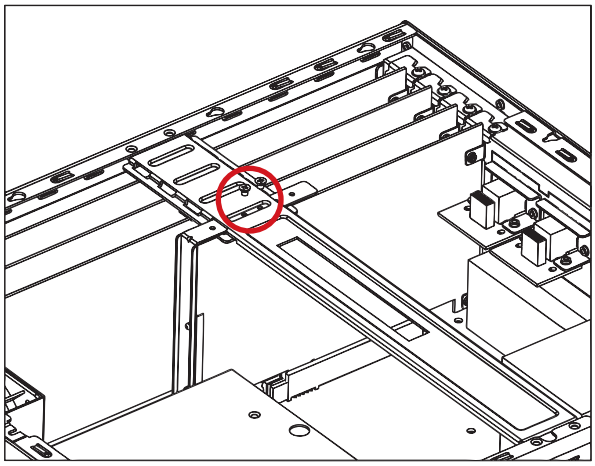
PCI Card removal / replacement - Full Lenght & Full Height

Note: Areas of interest are marked in this section with circles and arrows in RED color. Please disconnect ALL cables from the computer unit before proceeding!

1: Unscrew 1 screw to loosen the PCI card bracket from the cabinet. Turn anti-clockwise using a Pozidriv #2 screwdriver.	2: Remove or insert the desired PCI card into the slot. Make sure you do not force the card down, it should be mounted with a firm grip with two hands and performed in a straight up or downwards motion.
	
Repeat the procedure backwards to finalize operation.	

PCI Card removal / replacement - Half Lenght & Full Height

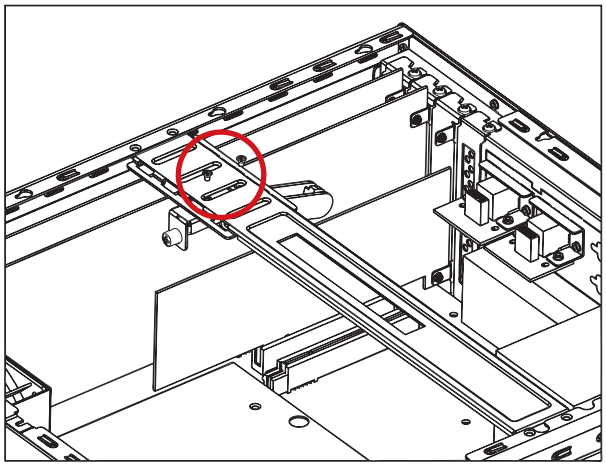
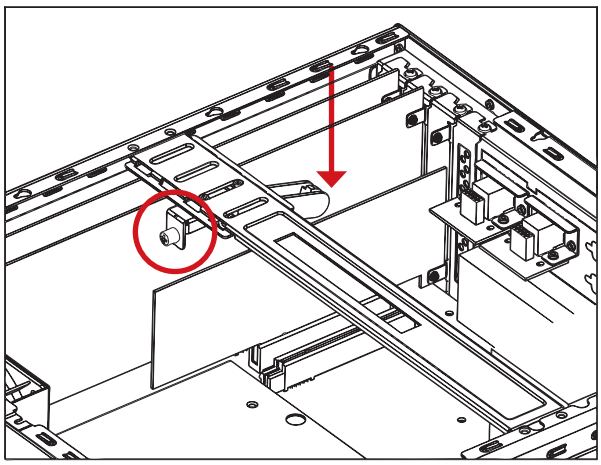
Note: Areas of interest are marked in this section with circles and arrows in RED color. Please disconnect ALL cables from the computer unit before proceeding!

1: Place the PCI Half Length bracket as shown and push/slide it in so it reaches the end of the PCI card.	2: Mount 2 screws on top to fasten the PCI Half Length bracket. Turn clockwise using a Pozidriv #2 screwdriver.
	

Repeat the procedure backwards to finalize operation.

PCI Card removal / replacement - Half Lenght & Half Height

Note: Areas of interest are marked in this section with circles and arrows in RED color. Please disconnect ALL cables from the computer unit before proceeding!

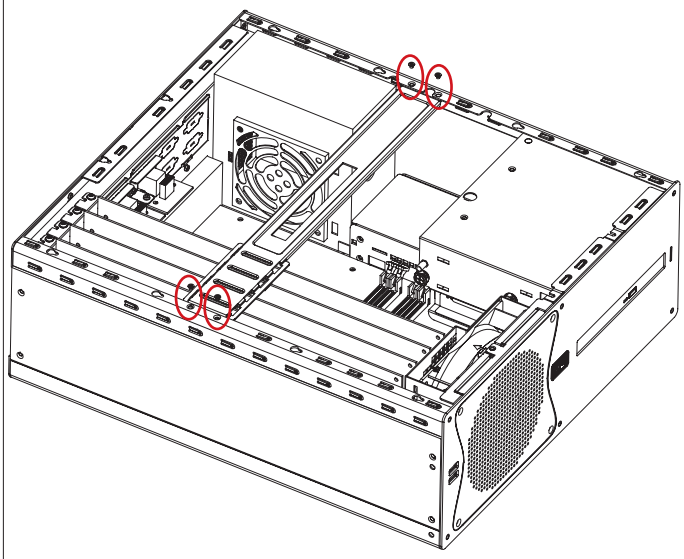
1: Place the PCI Half Length/Half Height bracket as shown and fasten it with 2 screws on the top. Turn clockwise using a Pozidriv #2 screwdriver.	2: Notice the screw at the end of the bracket. By turning this clockwise using your fingers the support piece will be pulled downwards and towards the edge of the PCI card, thus making it secured. Use a fair amount of force.
	

Hard Drive (HDD) removal / replacement

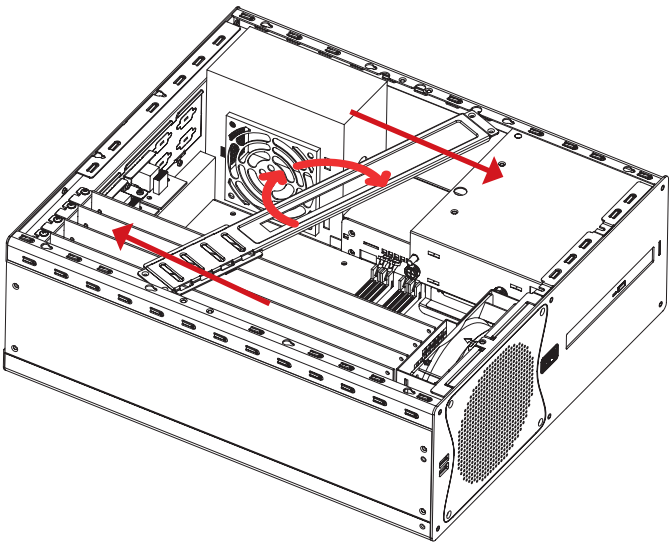
Note: Areas of interest are marked in this section with circles and arrows in RED color. Please disconnect ALL cables from the computer unit and HDD's before proceeding!

Note: Illustration shows AC model. For DC models, the power supply must also be removed in order to gain easy access to the HDD. As of June 2011, DC illustration is pending for this page. Meanwhile, please visit http://www.hatteland-display.com/support for assistance if needed.

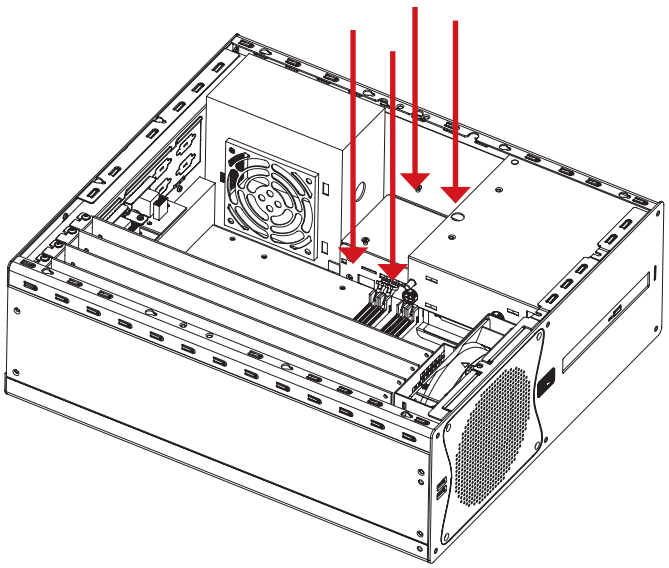
1: Unscrew 4 screws on each side of the PCI bracket. Turn anti-clockwise using a Pozidriv #2 screwdriver.



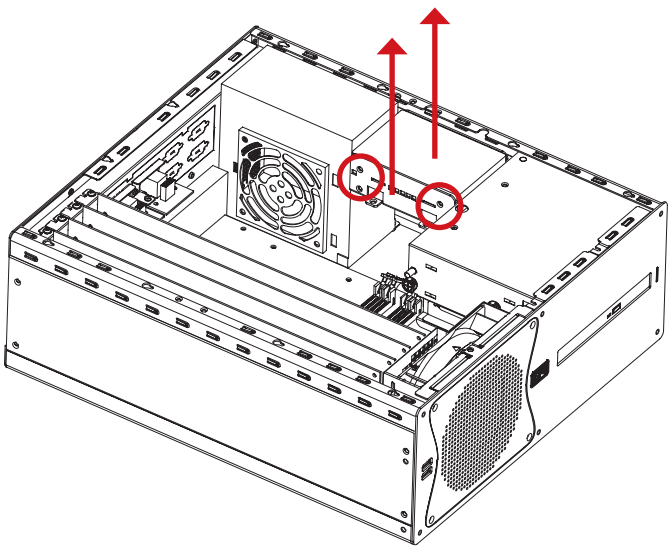
2: Push each side of the bracket, one forward and one backwards in a 45 degree rotation clockwise to slide it out of the tracks. Then lift up the the bracket to remove it.



3: Unscrew 4 screws on each side holding the HDD bracket at the bottom of the cabinet.



4: Lift the HDD bracket up and dismount the HDD from the bracket itself by unscrewing its 4 screws (2 on each side). Turn anti-clockwise using a Pozidriv #2 screwdriver.

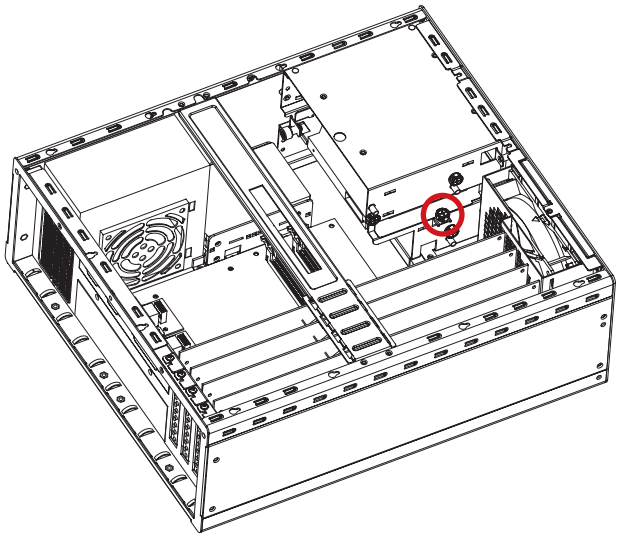


Repeat the procedure backwards to finalize operation.

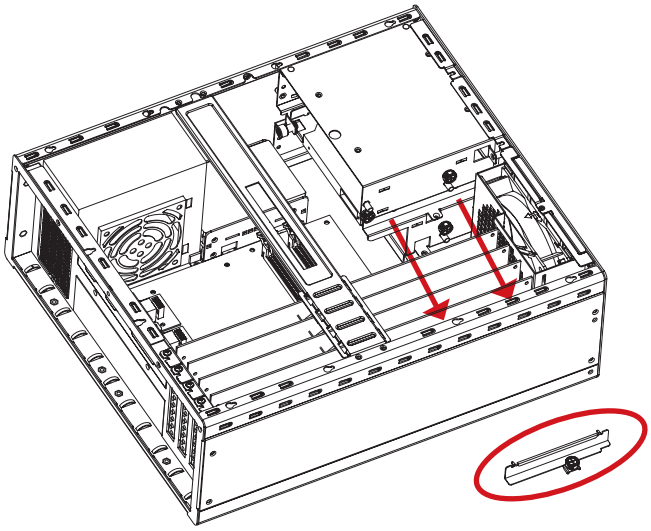
DVD/CD Drive removal / replacement

Note: Areas of interest are marked in this section with circles and arrows in RED color. Please disconnect ALL cables from the computer unit and DVD/CD drive before proceeding!

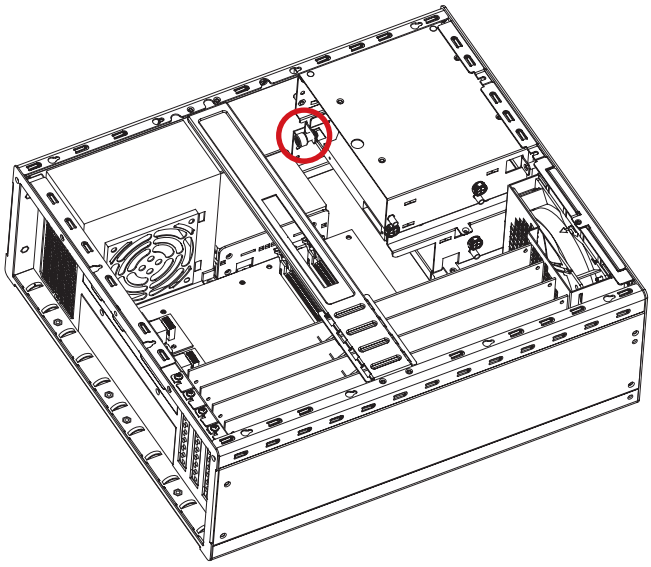
1: Unscrew 1 screw on the DVD/CD bracket. Turn anti-clockwise using your fingers.



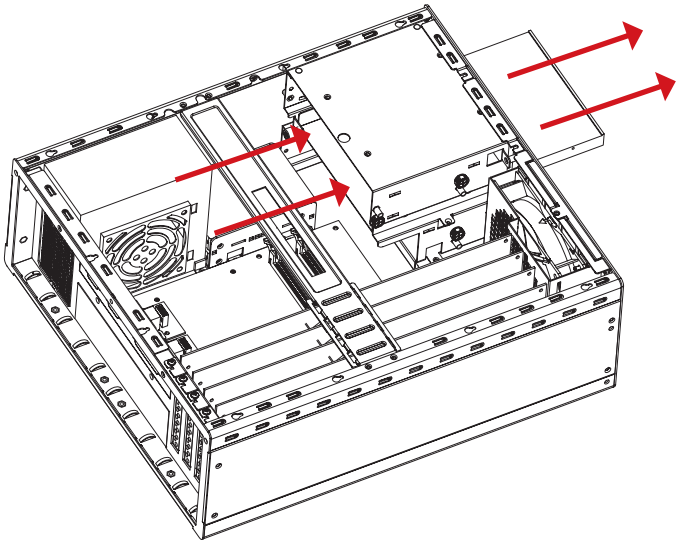
2: Gently pull out the DVD/CD bracket away. Remember it's orientation and placement.



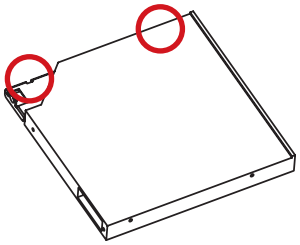
3: Unscrew 1 screw on the back of the DVD/CD drive. Turn anti-clockwise using fingers.



4: Gently push with your fingers on the back of the DVD/CD drive, while using your other hand to pull it out.



5: Unscrew 2 screws on the right side of the DVD/CD drive. Turn anti-clockwise using a Pozidriv #2 screwdriver.

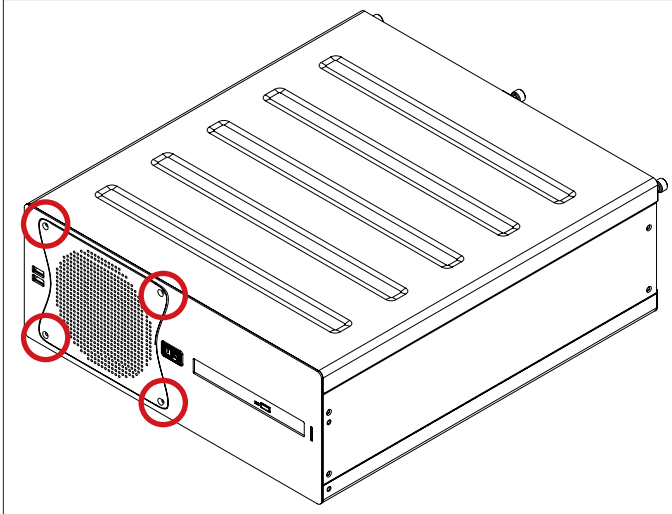


Repeat the procedure backwards to finalize operation.

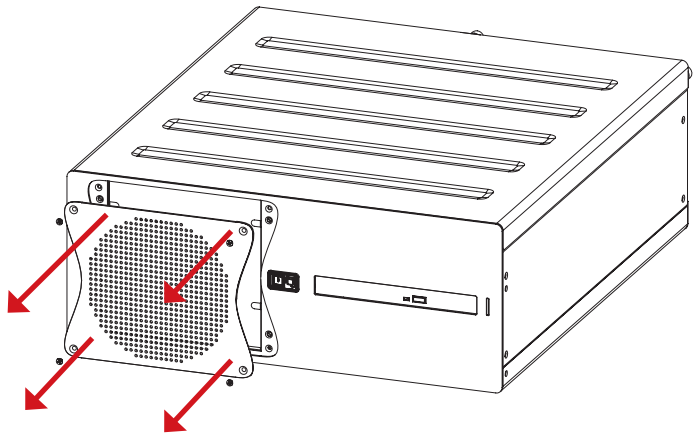
Air Filter removal / replacement - Alternative #1

Note: Areas of interest are marked in this section with circles and arrows in RED color. Please disconnect ALL cables from the computer unit and cards before proceeding!

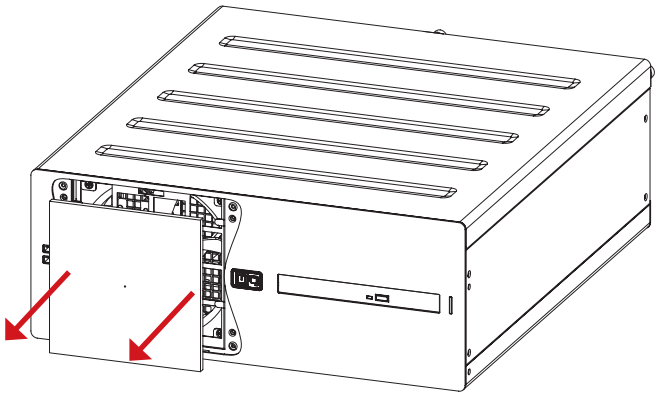
1: Unscrew 4 screws from the fan/filter cover in front of the unit. Turn anti-clockwise using a Pozidriv #2 screwdriver.



2: Gently pull out the fan/filter cover.



3: Gently pull out the Air Filter. Either clean or replace it.

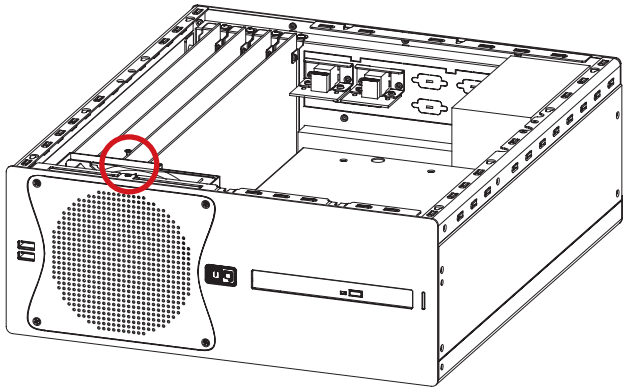


Repeat the procedure backwards to finalize operation.

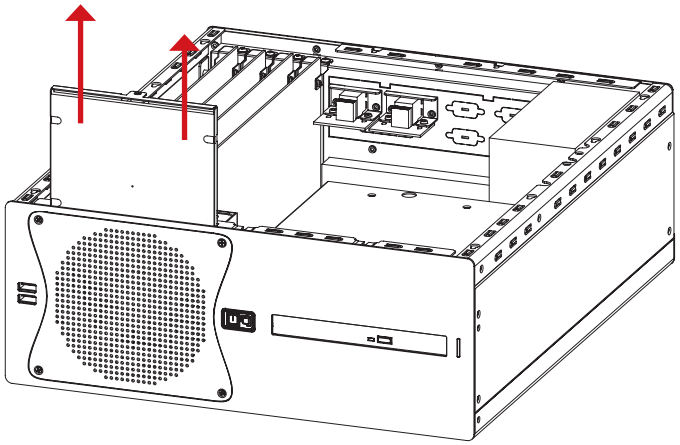
Air Filter removal / replacement - Alternative #2

Note: Areas of interest are marked in this section with circles and arrows in RED color. Please disconnect ALL cables from the computer unit and cards before proceeding!

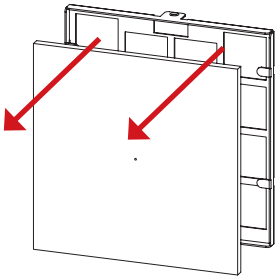
1: Remove cabinet cover (see beginning of this chapter). When cabinet cover is off, unscrew 1 screw on top which keeps the Air Filter Bracket in place. Turn anti-clockwise using a Pozidriv #2 screwdriver.



2: Gently pull/slide out the Air Filter Bracket.



3: Gently pull out the Air Filter away from the Air Filter Bracket. Either clean or replace it.

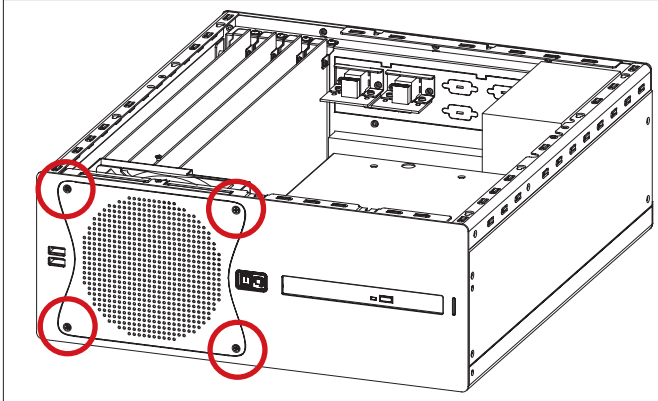


Repeat the procedure backwards to finalize operation.

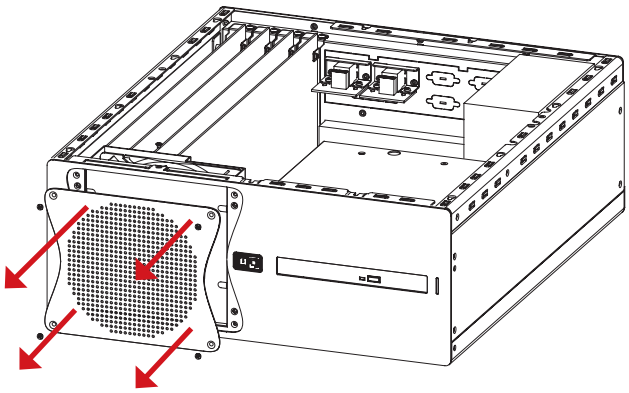
Front Fan removal / replacement

Note: Areas of interest are marked in this section with circles and arrows in RED color. Please disconnect ALL cables from the computer unit before proceeding!

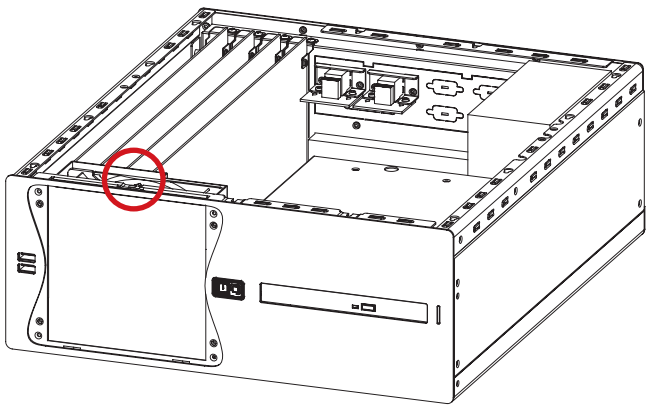
1: Remove cabinet cover (see beginning of this chapter) When cabinet cover is off, unscrew 4 screws from the fan/filter cover in front of the unit. Turn anti-clockwise using a Pozidriv #2 screwdriver.



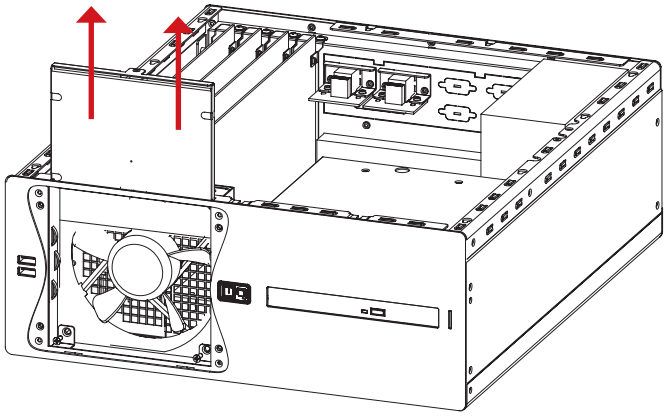
2: Gently pull out the fan/filter cover.



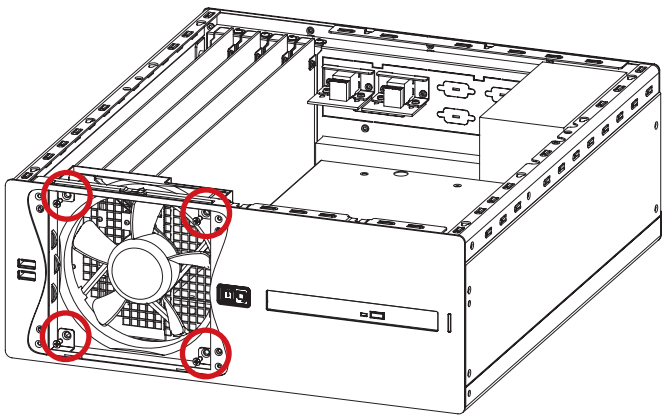
3: Unscrew 1 screw on top that keeps the Air Filter Bracket in place. Turn anti-clockwise using a Pozidriv #2 screwdriver.



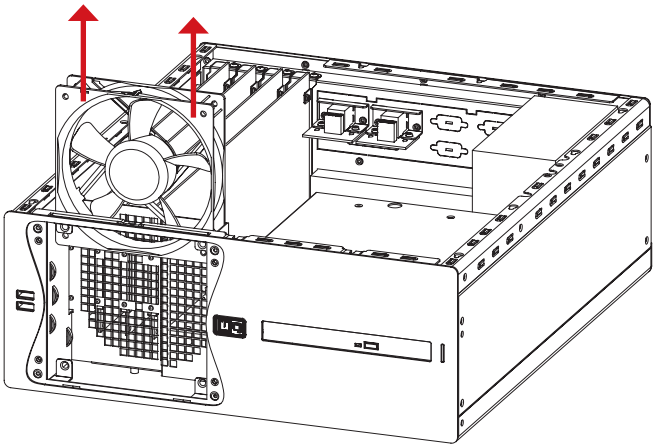
4: Gently pull up the Air Filter Bracket.



5: Unscrew 4 screws that keeps the fan in place. Turn anti-clockwise using a Pozidriv #2 screwdriver.



6: Lift/slide the fan up from the unit.

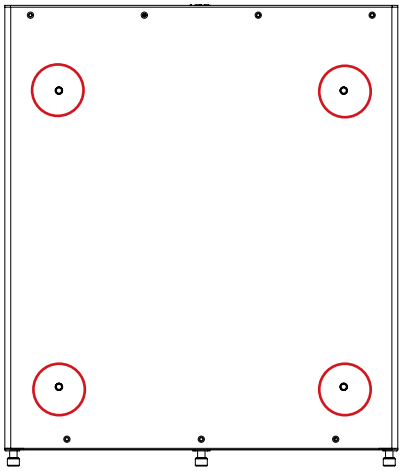


Repeat the procedure backwards to finalize operation.

Mounting Brackets for Console Mounting

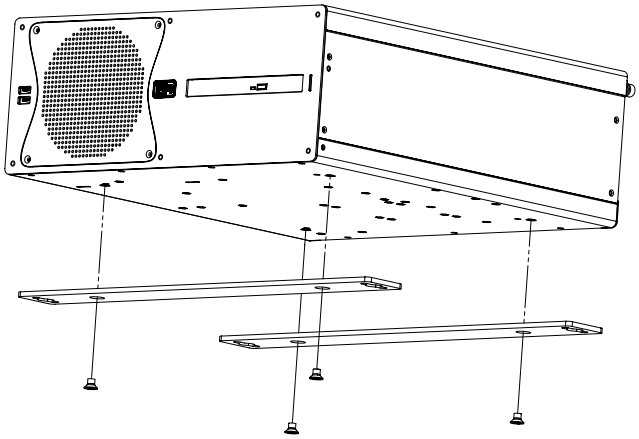
Note: The unit comes with mounting brackets and screws for console mounting in the package. Please review specifications and "Technical Drawings - Accessories" chapter in this user manual for additional information.

1: Bottom view showing 4 mounting holes.

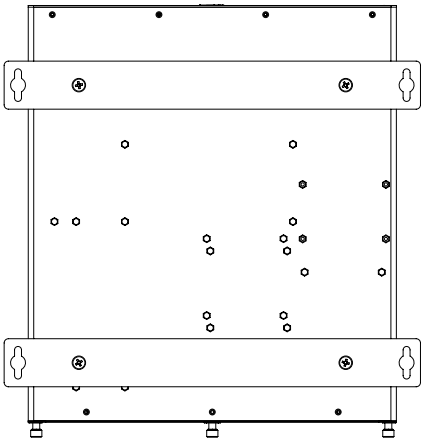


Connector Side

2: Mount the brackets with 4 x M6x8.
Note: Other/longer screws may damage the computer!

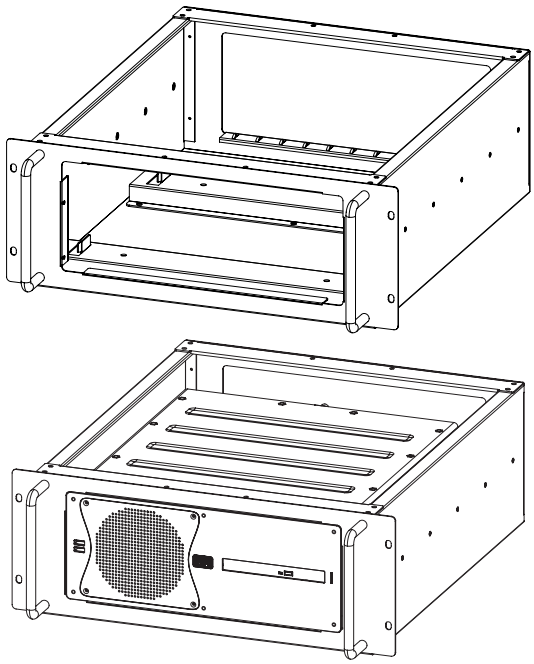
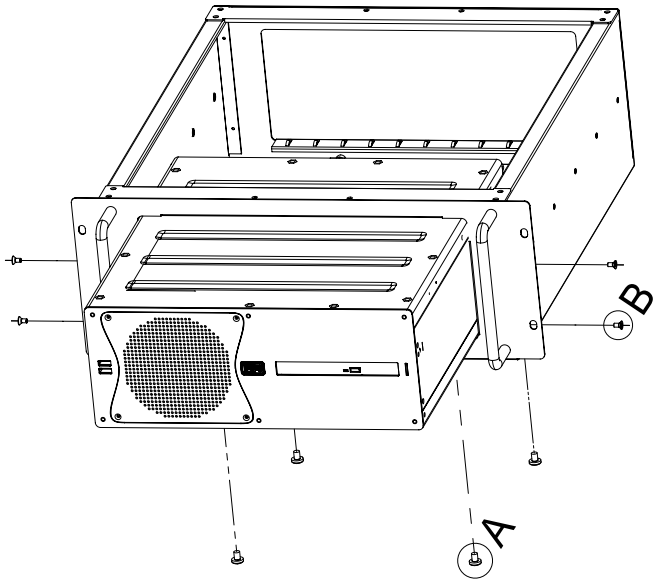


3: Bottom view with mounted brackets.



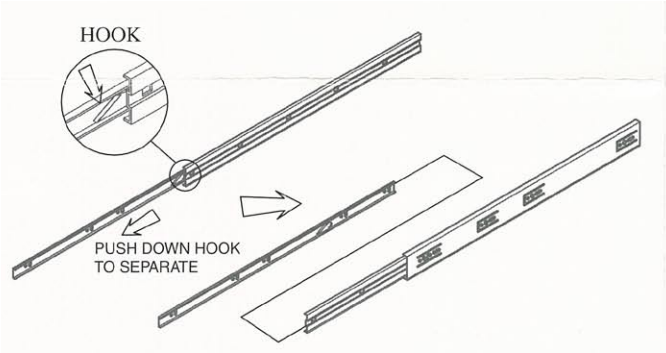
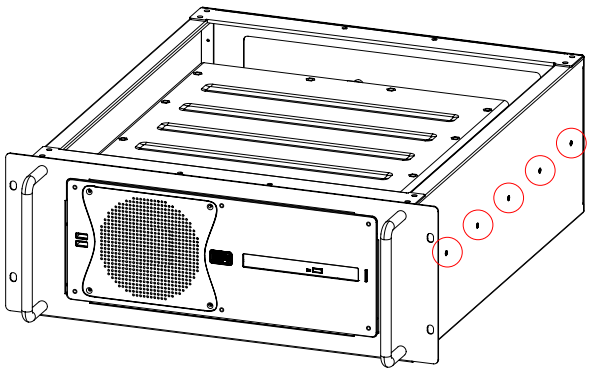
19 inch Rack Kit 4U

Note: The unit can also be mounted inside a Hatteland Display 4U cabinet for rack mounting purposes. Please review specifications and “Technical Drawings - Accessories” chapter in this user manual for additional information.

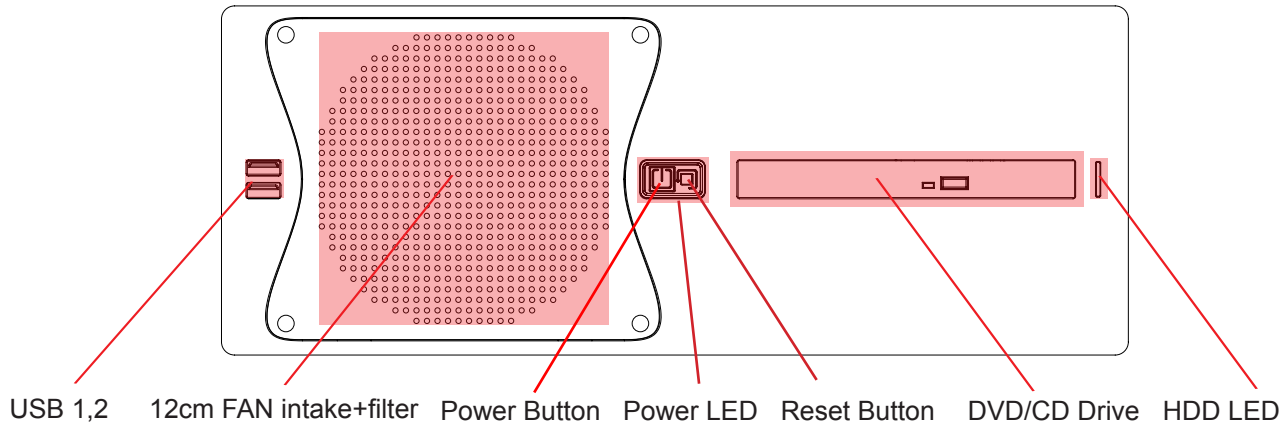
1: Empty 4U cabinet suitable for the computer and final solution (note that there is no 4U top cover)	2: Showing mounting and screw (included) positions. A = 4 Panhead M6 x 8 (mounted from under) B = 4 Countersunk M4 x8 (4 on each side)
	

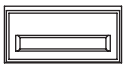
Sliding Rails

Note: The 19 inch Rack Kit 4U can also be mounted with sliding rails 20” or 26”. Please review 3rd party mounting instructions found in the Sliding Rails package.

1: The 3rd party sliding rails shown below. The 4U cabinet supports both 20” or 26” sizes depending on option chosen.	2: Mount the sliding rails on each side of the 4U cabinet. Fasten it with 5 screws (included) as indicated.
	

Front area of computer





USB1,2 INPUT/OUTPUT:

Supports any USB1.1 (12Mbps) or USB2.0 (480Mbps) compliant peripherals. Drivers for most USB devices are usually included in operating system or on separate installation CD's delivered with Third Party products. USB 1.1 devices will operate in USB 1.1 mode (12 Mbps).

POWER LED:

The Power LED Indication ring will illuminate static green when powered on. When power is off and the unit is turned off, the LED will also off.

Power Button:

To turn ON the computer, press down button and release it immediately. The Power LED indication riing will illuminate green and the operating system will automatically boot. To turn OFF the computer, press down this button and hold it for 3 seconds. The operating system may require additionally tasks to be performed before computer shuts down and turns off the unit.

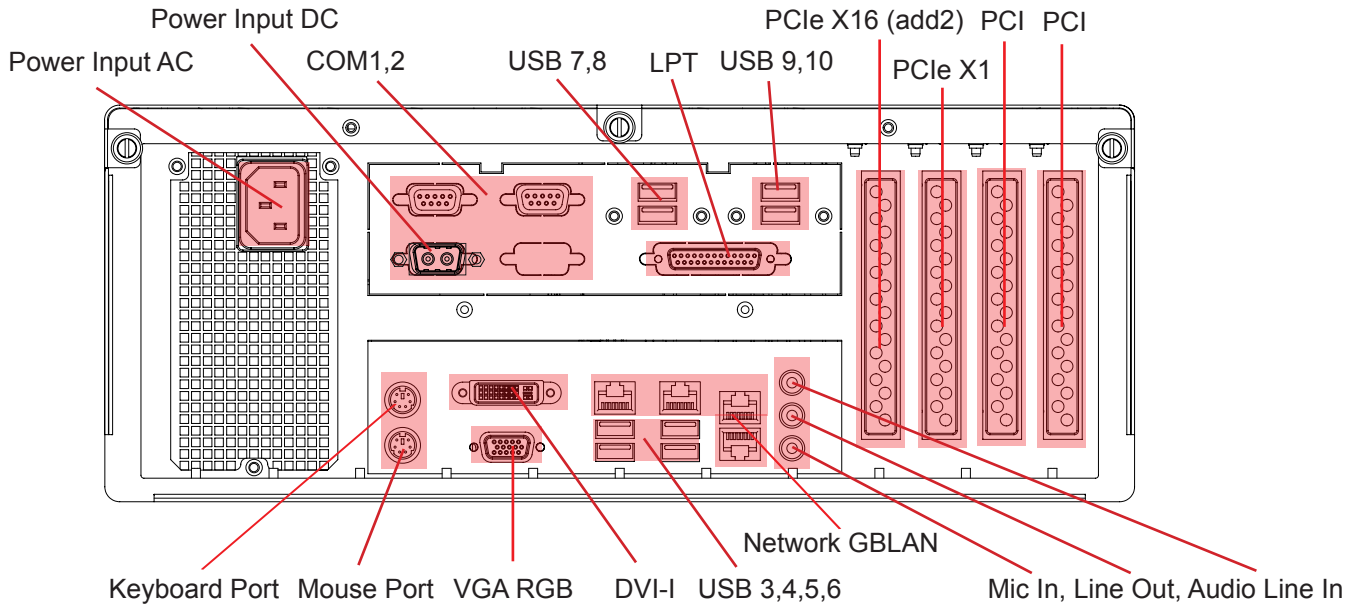
Reset Button: (Hard Reset)

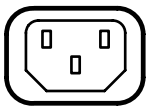
To reset the computer in case of severe software failure, press this button. This reset button is a hard reset which means the operating system will NOT be warned. Using this reset method may damage files and / or operating system in worst case scenarios. Precaution should be taken when using this. To perform a safe software reset, press either the power button, or use the operating system own reset functionality if possible.

HDD LED:

The Power LED Indication will illuminate green when HDD is reading/writing. When there is no HDD activity the LED will be off.

Connector area of computer



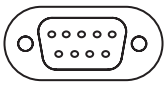


Power INPUT: (For units supporting AC input)

The internal AC power module supports both 115VAC/60Hz and 230/50Hz power input using a standard IEC European power plug. See specifications for more information.

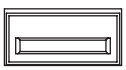
POWER INPUT: (For units supporting DC input)

Connect your DC power cable to the 2P Amphenol FCC17 D-SUB Connector (male). Secure the cable to the hex spacers provided on the unit, and secure the other end to your power supply. The internal DC power module supports 24VDC. Please check specifications for your unit.



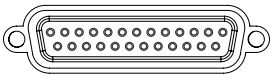
COM1,2 Serial Port INPUT/OUTPUT:

Supports RS-232 using D-SUB 9P Male connectors. Fasten the cable to the connector using the provided screws on the cable housing itself.



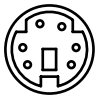
USB7,8 and USB9,10 INPUT/OUTPUT:

Supports any USB1.1 (12Mbps) or USB2.0 (480Mbps) compliant peripherals. Drivers for most USB devices are usually included in operating system or on separate installation CD's delivered with Third Party products. USB 1.1 devices will operate in USB 1.1 mode (12 Mbps).



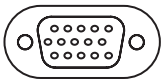
LPT1 Parallel Port INPUT/OUTPUT:

Standard LPT1 Printer/Parallel (SPP/EPP/ECP) port using a D-SUB 25P Female connector. Fasten the cable to the connector using the provided screws on the cable housing itself.



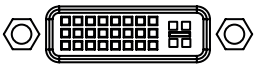
PS/2 Mouse and PS/2 Keyboard INPUTS:

Connect the PS/2 mouse cable to the PS/2 5P Connector (female) marked with MS. Connect the PS/2 keyboard cable to the PS/2 5P Connector (female) marked with KB.



RGB OUTPUT:

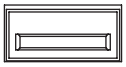
Will output a signal from the computer for use with external display or monitor. Connects via a High Density D-SUB 15P Female connector. Fasten the cable to the connector using the provided screws on the cable housing itself.



DVI-I OUT:

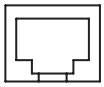
Connect your DVI cables to the DVI-I 24P Connectors (female) on the rear side of the unit. If possible, screw the DVI cables to the connectors and make sure you don't bend any of the pins inside the DVI cable connector.

Note: The DVI-I OUT connector can be configured as RGB OUT with the provided DVI-4 adapter. However, the signal outputted is a direct clone of RGB OUT signal. For true independent output, please connect a RGB cable to RGB OUT and a DVI cable to DVI-I OUT (without DVI-4 adapter) to achieve two different desktop outputs to two different displays or monitors.



USB3,4,5,6 INPUT/OUTPUT:

Supports any USB1.1 (12Mbps) or USB2.0 (480Mbps) compliant peripherals. Drivers for most USB devices are usually included in operating system or on separate installation CD's delivered with Third Party products. USB 1.1 devices will operate in USB 1.1 mode (12 Mbps).



Network INPUT/OUTPUT:

Supports 10/100/1000Mbps Ethernet (LAN). Suitable for twisted pair cables CAT.5E. Make sure the network cable connector "clicks" into the RJ-45 connector.

Audio INPUT/OUTPUT:

All connectors are 3.5" Jack Stereo. AC'97 audio support. Either function as Stereo Line In, Stereo Line Out and Stereo MIC In or as 6-channel surround out where configuration is as follows:

Line In - Rear Sound L/R
Line Out - Front Sound L/R
Mic In - Center/Subwoofer Sound.

These settings can be modified within the audio driver software.

PCIe X16 (add2) Slot:

Supports Full Height and Full Length Profile card in one available slot. Cards is normally installed from factory. Please review the General Installation Recommendations chapter in this manual for more information. Additionally consult the 3rd party manual available on the attached documentation CD delivered with this unit.

PCIe X1 Slot:

Supports Full Height and Full Length Profile card in one available slot. Cards is normally installed from factory. Please review the General Installation Recommendations chapter in this manual for more information. Additionally consult the 3rd party manual available on the attached documentation CD delivered with this unit.

PCI Rev2.3 Slots:

Supports Full Height and Full Length Profile card in two available slots. Cards is normally installed from factory. Please review the General Installation Recommendations chapter in this manual for more information. Additionally consult the 3rd party manual available on the attached documentation CD delivered with this unit.

Specifications

Note: All specifications are subject to change without prior notice!

TECHNICAL DESCRIPTION

Computer Specifications:		External Connector Type:
• Installed Operating System	: None for standard version (check options below for OS options)	
• Media Drive	: 1 x DVD-RW/CD-RW Dual Recorder/Player	
• Processor	: 1 x Intel® Core™2 Duo Desktop Processor E8400 - 3.0GHz, Bus Speed 1333MHz, 6MB L2 Cache	
• Memory	: 4 x 1GB installed (Dual Channel DDR2 800/667 SDRAM, 240-pin DIMM)	
• SATA Interface	: 2 x 250GB Automotive HDD, 5400RPM, 8MB Buffer	
• Graphics	: Intel® Graphics Media Accelerator 3100 (Intel® GMA 3100) integrated	1 x DVI-I & 1 x DB15F
• Graphics Resolution	: Max 2048 x 1536 @ 75Hz	
• System Chipset	: Intel® Q35 / ICH9DO support Intel® Active Management Technology	
• IO Chipset	: Winbond W83627DHG-A	
• BIOS	: AWARD BIOS	
• PCI Slots	: 2 x PCI Rev2.3 Slot 32-bit, 3V and 5V Interface, Full Height & Length	
• PCIe Slots	: 1 x PCI Express X16 (add2), Full Height & Length + 1 X PCI Express X 1, Full Height & Length	
• Ethernet #1	: 2 x 10/100/1000Mbps, Intel® 82566DM Gigabit LAN support Intel AMT	2 x RJ-45
• Ethernet #2	: 2 x 10/100/1000Mbps, Realtek RTL 8168C(P)8111C PCI-E Gigabit	2 x RJ-45
• Serial Ports	: 2 x RS-232	2 x DB9M
• Parallel Port (LPT)	: 1 x Bi-Directional Centronics with ECP or EPP mode	1 x DB25F
• USB Ports	: 10 x USB ports (8 in rear, 2 in front) - Supports 2.0 & 1.1	10 x USB Type A
• Keyboard Port	: Standard PS/2 mini DIN connector	1 x PS/2
• Mouse Port	: Standard PS/2 mini DIN connector	1 x PS/2
• Audio	: Realtek® ALC888, 7.1, Mic. in, Line in, Line out, 3.5mm	3 x JACKS
• Speaker	: No	
• Power Manager	: ACPI	
• Watchdog Timer	: Reset: 1 sec.~255 min. and 1 sec. or 1 min./step	
• H/W Status Monitor	: Temperatures, voltages & cooling fan status. Auto throttling control if CPU overheats	

Power Specifications:	External Connector Type:
Power Supply Options:	
• 24 VDC	1 x 2p D-SUB (male) Amphenol FCC17
• Power Consumption - Operating : 70W typical	

Environmental Performance:

- MIL-STD-167-1 Vibration
- MIL-STD-810F Shock 50G 30ms
- EN60945 4th (EN 60945:2002)
- Operating : Temperature -15 deg. C to +55 deg. C.
  Humidity up to 95%
  DNV Temperature Class B +70 deg. C for 2 hours
- Storage : Temperature -20 deg. C to +60 deg. C.
  Humidity up to 95%

EMI Testing:

- MIL-STD-461E Naval Limits
- CE 101, CE 102
- RE 101
- RE 102
- CS 101, CS 114, CS 116,
- RS 101, RS 103
- IEC 60945 4th (EN 60945:2002)

Available Accessories:

- HT 00225 OPT-A1 = Mounting Rails Kit: 2 x 26" ball bearing sliding, for 19 Inch Rack
- HT 00224 OPT-A1 = Mounting Rails Kit: 2 x 20" ball bearing sliding, for 19 Inch Rack
- HT 00223 OPT-A1 = 1 x 4U 19" Rack Case Kit (compatible with HT 00224/00225)
- HT 00226 OPT-A1 = 2 x Mounting Bracket, 4mm SECC+Zinc Plating, RAL9011*
- HT 00215 OPT-A1 = 1 x Recovery Kit (USB Flash)
- HT 00229 OPT-A1 = 1 x Mounting Bracket PCI Kit

*included with standard delivery

Capabilities / Prepared for:

- 8GB (Dual Channel DDR2 800/667 SDRAM, 240-pin DIMM) memory (not tested)

Operating System Options:

- HM C01 ST0-xxxx = No OS
- HM C01 STD-xxxx= Microsoft® Windows® Embedded Enterprise (Win XP Pro Eng w/SP2c, 32bit)
- HM C01 ST3-xxxx = Microsoft® Windows® Embedded Enterprise (Win Server 2003 Eng, 32bit)
- HM C01 ST7-xxxx = Microsoft® Windows® Embedded Enterprise (Win 7 Pro Eng, 32bit)
- HM C01 ST8-xxxx = Microsoft® Windows® Embedded Enterprise (Win Server 2008 Eng, 32bit)

MECHANICAL DESCRIPTION

Physical Specifications:

- 345 (W) x 133 (H) x 390 (D) mm
- 13.58" (W) x 5.24" (H) x 15.35" (D)
- Weight: 10 kg (approx)
- Power button, power led, reset button and HDD Led in front.
- Replaceable Air Filter in front
- Includes Mounting Brackets (for console mounting)

Environmental Considerations:

Safety Considerations:
Even although the test conditions for bridge units provide for a maximum operating temperature of 55°C, continuous operation of all electronic components should, if possible, take place at ambient temperatures of only 25°C. This is a necessary prerequisite for long life and low service costs.

Compass Safe Distance HM C01 STx-xxxx = Standard: 155cm - Steering: 95cm - MTBF (Mean Time Between Failures) = 22581 hours

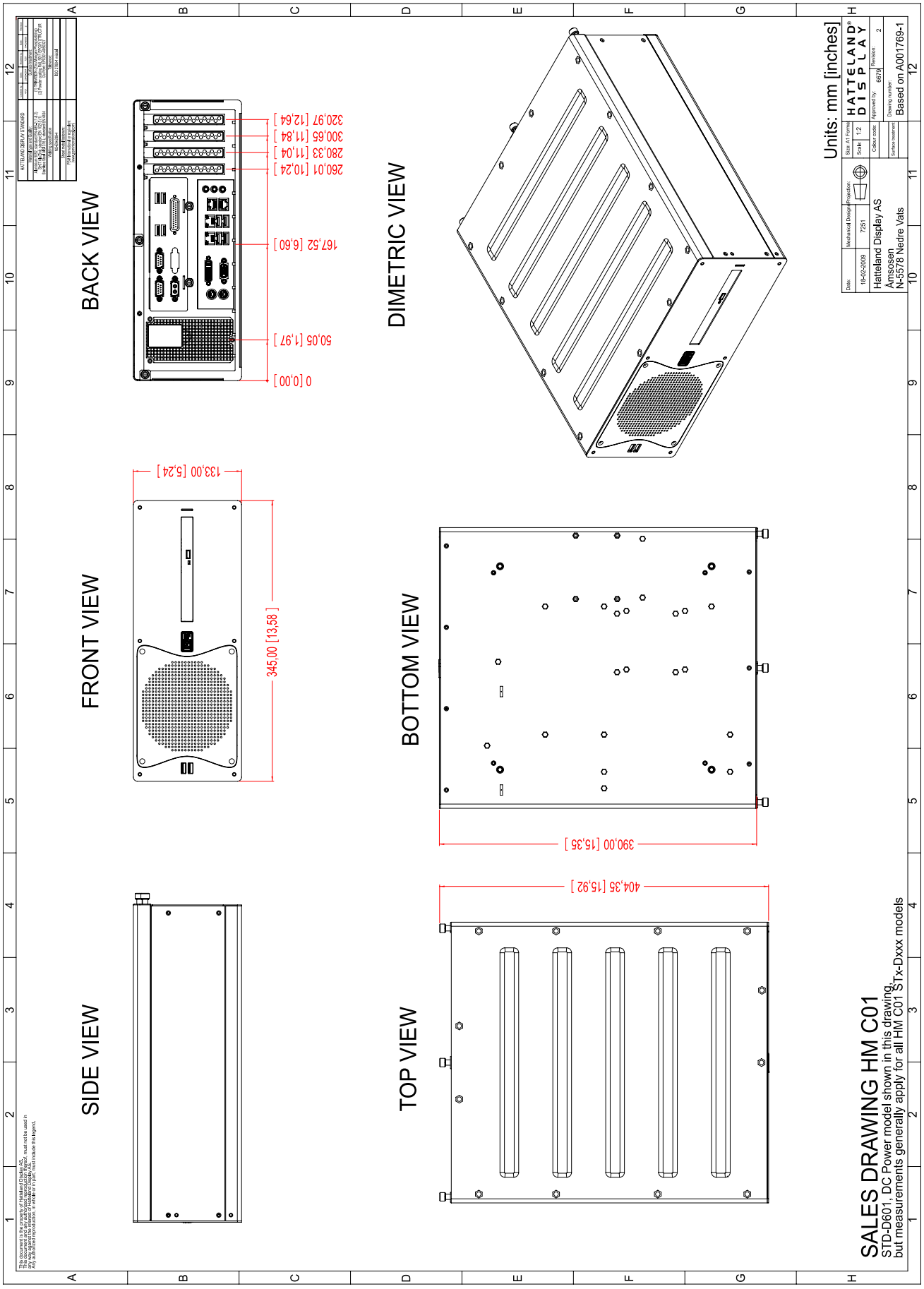
APPROVALS & CERTIFICATES

These products have been tested / type approved by the following classification societies:

IEC 60945 4th (EN 60945:2002) **IACS E10** **EN61162** **ClassNK** - Nippon Kaiji Kyokai (pending)
DNV - Det Norske Veritas (pending) **GL** - Germanischer Lloyd (pending) **BV -** Bureau Veritas (pending) **ABS** - American Bureau of Shipping (pending)
LRS - Lloyd's Register of Shipping (pending)

Technical Drawings

Dimensions might be shown with or without decimals and indicated as mm [inches]. Tolerance on drawings is +/- 1mm. For accurate measurements, check relevant DWG file.



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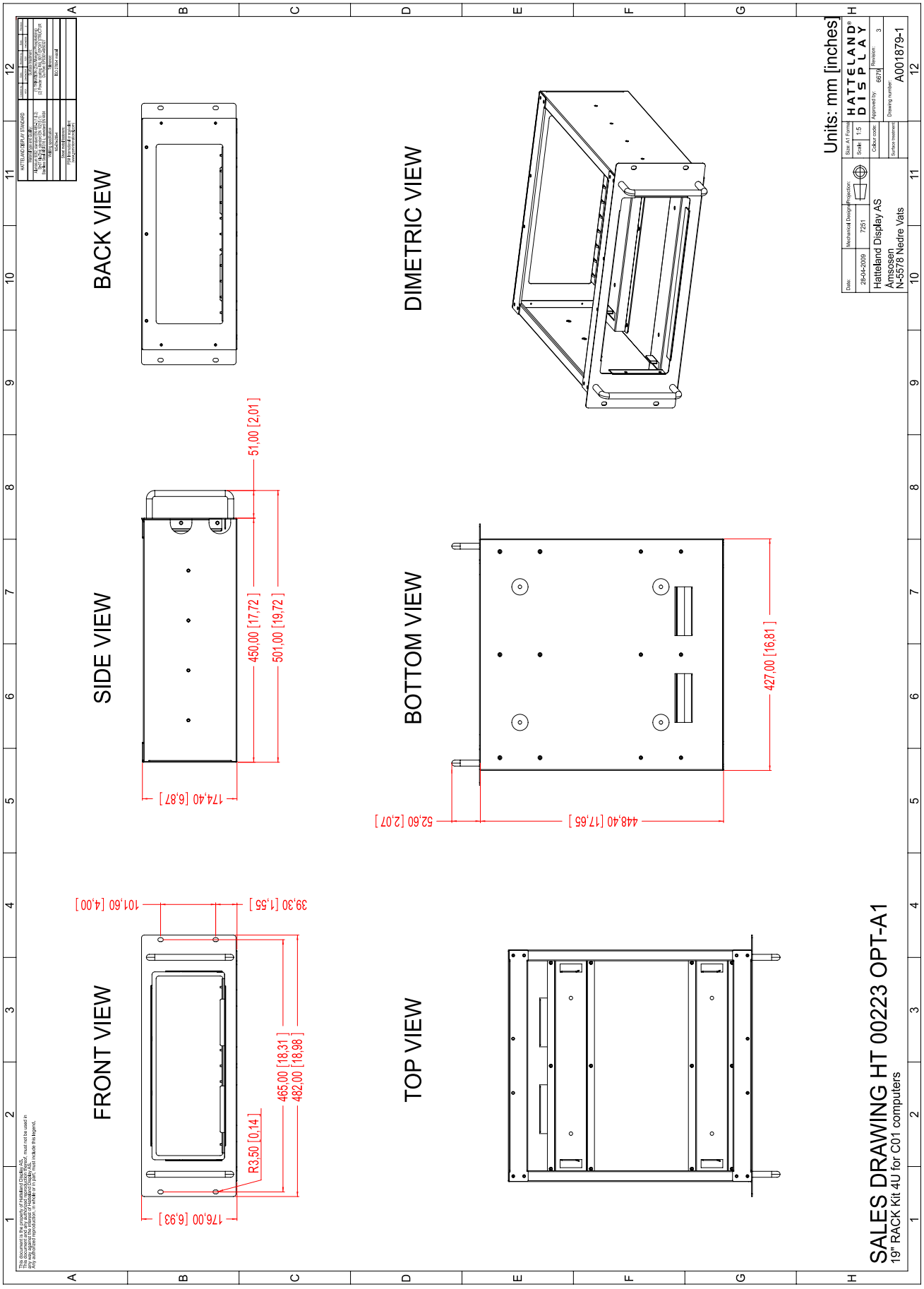
Technical Drawings - Accessories



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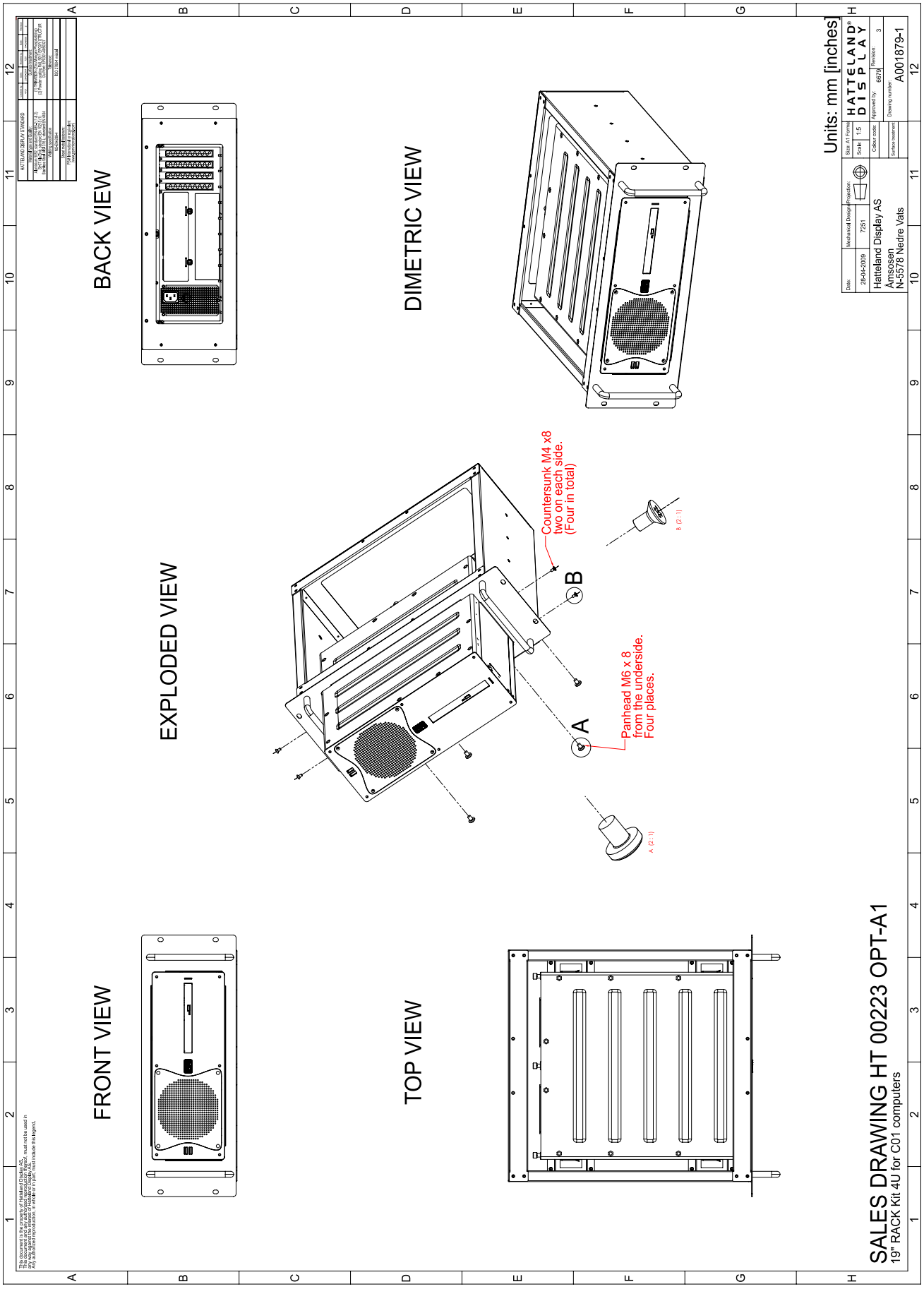

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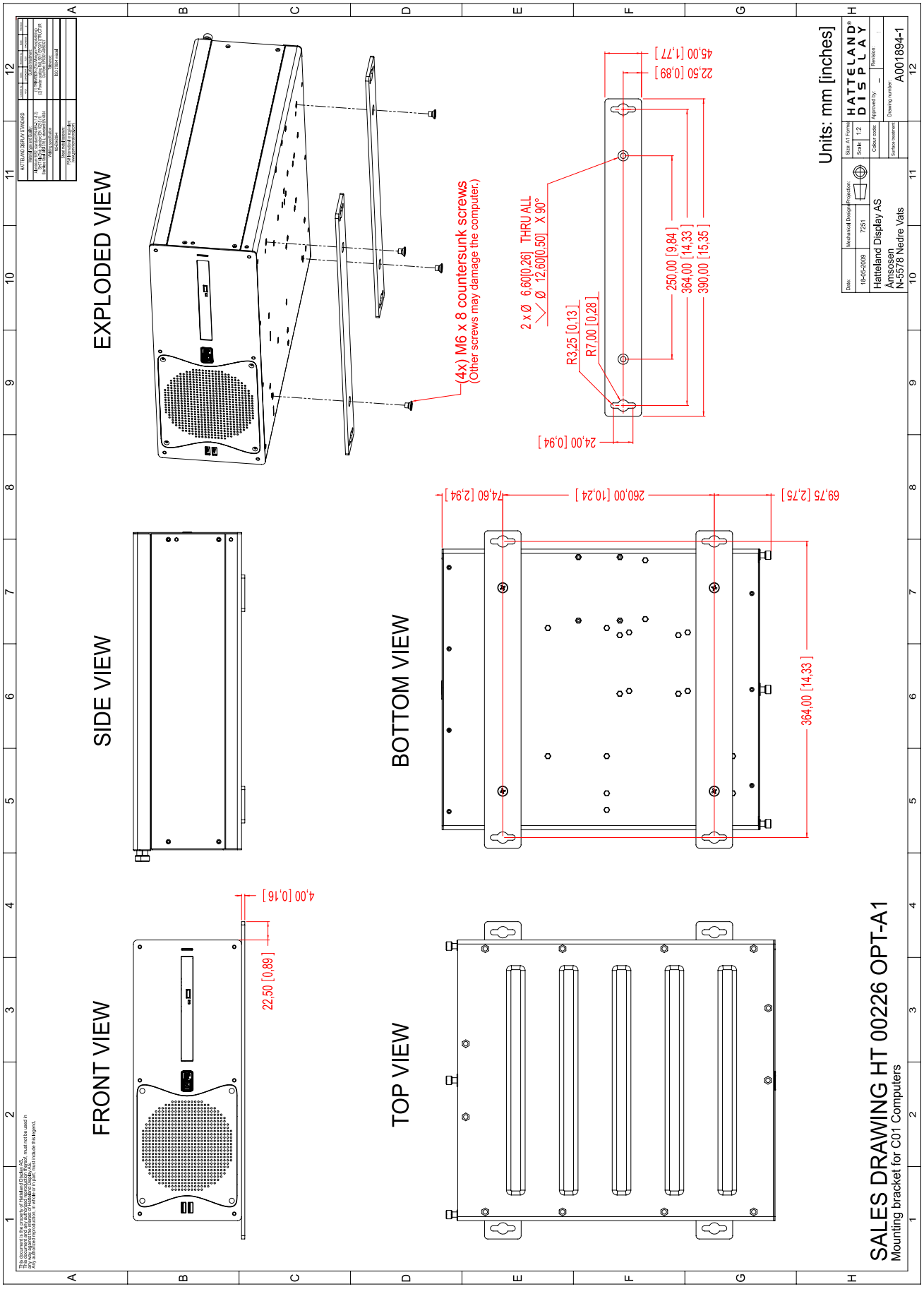

Dimensions might be shown with or without decimals and indicated as mm [inches]. Tolerance on drawings is +/- 1mm. For accurate measurements, check relevant DWG file.

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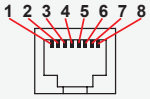
Appendixes

Pin Assignments - Common Connectors

Note: Not all connectors may be available on your specific product. This depends on the amount of additional hardware installed from factory, or customized solutions. These pin assignments are for the common connectors used. Connectors are seen from users Point Of View (POV).

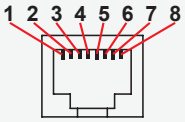
Pin Assignments - RJ45 10/100 LAN

Use category 5 - twisted pair cable



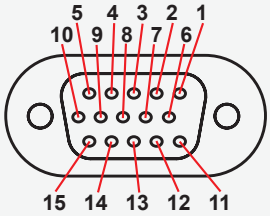
Pin 01 - TDP	Transmit Differential Pair (Positive)
Pin 02 - TDN	Transmit Differential Pair (Negative)
Pin 03 - RDP	Receive Differential Pair (Positive)
Pin 04 - NC	Not Connected
Pin 05 - NC	Not Connected
Pin 06 - RDN	Receive Differential Pair (Negative)
Pin 07 - NC	Not Connected
Pin 08 - NC	Not Connected

Pin Assignments - RJ45 10/100/1000 GBLAN



Pin 01 - D0P	Differential Pair 0 (Positive)
Pin 02 - D0N	Differential Pair 0 (Negative)
Pin 03 - D1P	Differential Pair 1 (Positive)
Pin 04 - D2P	Differential Pair 2 (Positive)
Pin 05 - D2N	Differential Pair 2 (Negative)
Pin 06 - D1N	Differential Pair 1 (Negative)
Pin 07 - D3P	Differential Pair 3 (Positive)
Pin 08 - D3N	Differential Pair 3 (Negative)

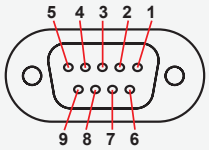
Pin Assignments - 15P HD RGB VGA



Pin 01	Red, analog
Pin 02	Green, analog
Pin 03	Blue, analog
Pin 04	Reserved for monitor ID bit 2 (grounded)
Pin 05	Digital ground
Pin 06	Analog ground red
Pin 07	Analog ground green
Pin 08	Analog ground blue
Pin 09	+5V power supply for DDC (optional)
Pin 10	Digital ground
Pin 11	Reserved for monitor ID bit 0 (grounded)
Pin 12	DDC serial data
Pin 13	Horizontal sync or composite sync, input
Pin 14	Vertical sync, input
Pin 15	DDC serial clock

Pin Assignments - 9P Serial COM RS-232

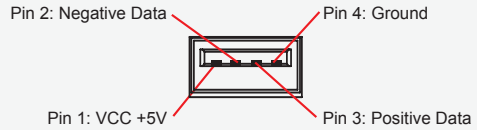
This connector is commonly used for:



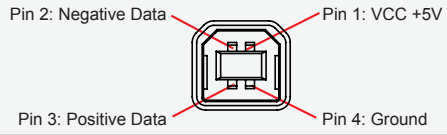
Pin 01 - DCD	Data Carry Detect
Pin 02 - SIN	Serial In or Receive Data
Pin 03 - SOUT	Serial Out or Transmit Data
Pin 04 - DTR	Data Terminal Ready
Pin 05 - GND	Ground
Pin 06 - DSR	Data Set Ready
Pin 07 - RTS	Request To Send
Pin 08 - CTS	Clear To Send
Pin 09 - RI	Ring Indicate

Note: The table above lists commonly-used RS-232 signals and pin assignments, however Serial Communication for Hatteland Display products may vary from product to product to support different end user systems. Please check additional pin assignments section in this manual for specific RS-232/RS-422/RS-485 pin assignments for your exact product.

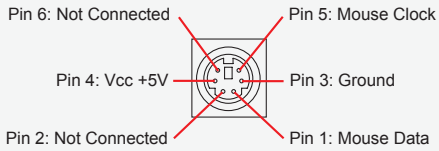
Pin Assignments - USB TYPE A



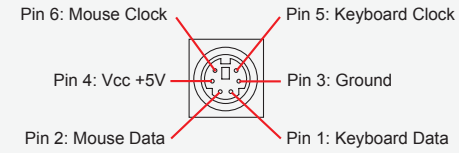
Pin Assignments - USB TYPE B



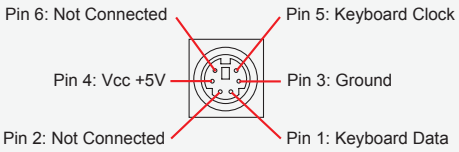
Pin Assignments - 5P PS/2 MOUSE



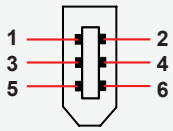
Pin Ass. - 5P PS/2 KEYBOARD+MOUSE Combined



Pin Assignments - 5P PS/2 KEYBOARD

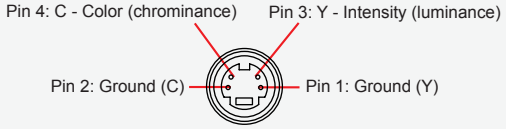


Pin Assignments - FIREWIRE IEEE-1394

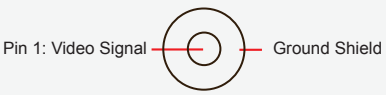


Pin 01 - VCC	Power
Pin 02 - GND	Grounding for power and inner cable shield
Pin 03 - TPB-	Twisted Pair B- Receive Strobe, Transmit Data
Pin 04 - TPB+	Twisted Pair B+ Receive Strobe, Transmit Data
Pin 05 - TPA-	Twisted Pair A- Transmit Strobe, Receive Data
Pin 06 - TPA+	Twisted Pair A+ Transmit Strobe, Receive Data

Pin Assignments - 5P S-VHS/S-VIDEO

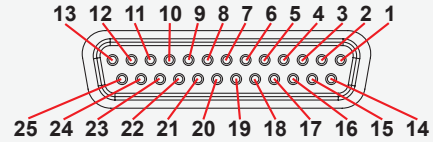


Pin Assignments - RCA/BNC 1P COMP. VIDEO



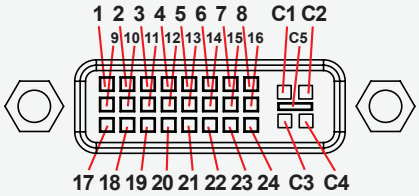
Pin Assignments - Common Connectors

Pin Assignments - 25P Parallel



Pin 01 - STROBE	This signal indicates to the printer that data at PD7..0 are valid.
Pin 02 - DATA0	Parallel data bus from PC board to printer. The data line are able to operate in PS/2 compatible bi-directional mode.
Pin 03 - DATA1	Same as Pin 02
Pin 04 - DATA2	Same as Pin 02
Pin 05 - DATA3	Same as Pin 02
Pin 06 - DATA4	Same as Pin 02
Pin 07 - DATA5	Same as Pin 02
Pin 08 - DATA6	Same as Pin 02
Pin 09 - DATA7	Same as Pin 02
Pin 10 - ACK	Signal from printer indicating that the printer has received the data and is ready to accept further data.
Pin 11 - BUSY	Signal from printer indicating that the printer cannot accept further data.
Pin 12 - PE	Signal from printer indicating that the printer is out of paper.
Pin 13 - SELECT	Signal from printer to indicate that the printer is selected.
Pin 14 - AUTO FEED	This active low output causes the printer to add a line feed after each line printed.
Pin 15 - ERR#	Signal from printer indicating that an error has been detected.
Pin 16 - INIT#	This active low output initialises (resets) the printer.
Pin 17 - SLIN#	Signal to select the printer sent from CPU board to printer.
Pin 18 - GND	Ground
Pin 19 - GND	Ground
Pin 20 - GND	Ground
Pin 21 - GND	Ground
Pin 22 - GND	Ground
Pin 23 - GND	Ground
Pin 24 - GND	Ground
Pin 25 - GND	Ground

Pin Assignments - 24P DVI-D & DVI-I



Pin 01	T.M.D.S. Data2 - (Digital - RED link 1)
Pin 02	T.M.D.S. Data2 + (Digital + RED link 1)
Pin 03	T.M.D.S. Data2/4 Shield
Pin 04	T.M.D.S. Data4 - (Digital - GREEN link 2)
Pin 05	T.M.D.S. Data4 + (Digital + GREEN link 2)
Pin 06	DDC Clock
Pin 07	DDC Data
Pin 08	Analog Vertical Sync (DVI-I only)
Pin 09	T.M.D.S. Data1 - (Digital - GREEN link 1)
Pin 10	T.M.D.S. Data1 + (Digital + GREEN link 1)
Pin 11	T.M.D.S. Data1/3 Shield
Pin 12	T.M.D.S. Data3 - (Digital - BLUE link 2)
Pin 13	T.M.D.S. Data3 + (Digital + BLUE link 2)
Pin 14	+5V Power (for standby mode)
Pin 15	Ground (for +5V and analog sync)
Pin 16	Hot Plug Detect
Pin 17	T.M.D.S. Data0 - (Digital - BLUE link 1) and digital sync.
Pin 18	T.M.D.S. Data0 + (Digital + BLUE link 1) and digital sync.
Pin 19	T.M.D.S. Data0/5 Shield
Pin 20	T.M.D.S. Data5 - (Digital - RED link 2)
Pin 21	T.M.D.S. Data5 + (Digital - RED link 2)
Pin 22	T.M.D.S. Clock Shield
Pin 23	T.M.D.S. Clock + (Digital clock + (Links 1 and 2)
Pin 24	T.M.D.S. Clock - (Digital clock - (Links 1 and 2)
Pin C1	Analog RED
Pin C2	Analog GREEN
Pin C3	Analog BLUE
Pin C4	Analog Horizontal Sync.
Pin C5	Analog Ground (return for RGB signals)

DDC = Display Data Channel /// T.M.D.S = Transition Minimized Differential Signal /// PIN C1,C2,C3,C4 = Only present on DVI-I connectors.
NOTE: Connector shows a DUAL LINK design, but some units may not support it. Only products with 1920x1200 or more in resolution require / support DUAL LINK.

Additional connector pinouts may be available in third party motherboard manuals, primarly for computers only. Please see manual/drivercd delivered with your product or own section in this user manual.

GENERAL TROUBLE-SHOOTING

CD-ROM FAILURE OR READ/DETECTION PROBLEMS?
If the product are operated/located in a area with extreme condensation, the CD/DVD-ROM drive may not work correctly due to condensation on the read head. Keep the product on for a while until it's reached normal operating temperature, and retry accessing discs. Otherwise, consider using USB memory sticks or alternative storage devices.

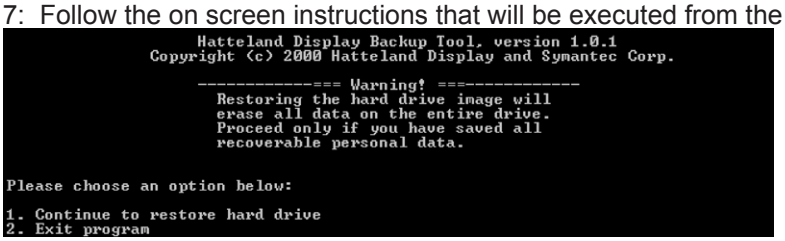
NO CD-ROM AVAILABLE ON YOUR PRODUCT FOR INSTALLING DRIVERS/SOFTWARE?
Please use USB memory sticks, USB Floppy drive, USB CD-Rom Drive or alternative storage devices to transfer or install software on CD-ROM-less units.

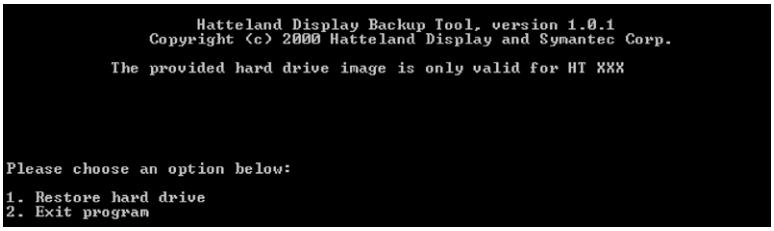
RECOVERY/RESCUE IMAGE

The Recovery Kit (USB Flash) media access a hidden partition image located on factory delivered units with HDD/SDD hardware installed. This image is not accessible from any operating system, only by the Recovery Kit (USB Flash) provided by Hatteland Display.

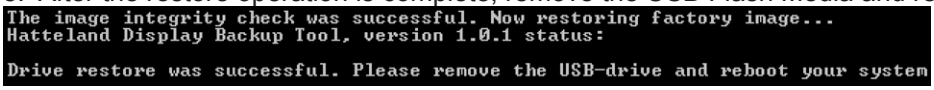
Note that all files created after first time factory boot will be DELETED!

Restore from external USB recovery image (HT 00215 OPT-A1):
1: Insert the USB Flash media into the computer usb connector.
2: Restart the computer.
3: On the first screen that appear, press "Delete" or "F2" on the keyboard (depending on BIOS model) to bring up the BIOS setup screen.
4: Select "Advanced BIOS features" or "Boot" (depending on BIOS model).
5: Set "Harddisk boot priority" to "USB HDD" as number 1
or select "Hard Disk Drives", then modify "1 st" to "USB: ...." depending on BIOS model.
6: Press F10 and then Enter on keyboard, or "F4" to save settings (depending on BIOS model).
7: Follow the on screen instructions that will be executed from the USB Flash media, such as;


Hatteland Display Backup Tool, version 1.0.1
Copyright (c) 2000 Hatteland Display and Symantec Corp.
---------- Warning! ----------
Restoring the hard drive image will
erase all data on the entire drive.
Proceed only if you have saved all
recoverable personal data.
Please choose an option below:
1. Continue to restore hard drive
2. Exit program

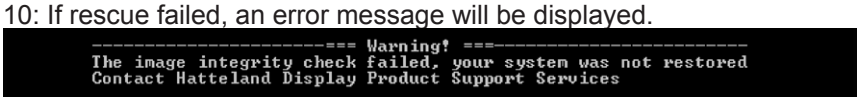

Hatteland Display Backup Tool, version 1.0.1
Copyright (c) 2000 Hatteland Display and Symantec Corp.
The provided hard drive image is only valid for HT XXX
Please choose an option below:
1. Restore hard drive
2. Exit program

8: After the restore operation is complete, remove the USB Flash Media and restart.


The image integrity check was successful. Now restoring factory image...
Hatteland Display Backup Tool, version 1.0.1 status:
Drive restore was successful. Please remove the USB-drive and reboot your system

9: The computer is now restored to its original factory state.

10: If rescue failed, an error message will be displayed.


---------- Warning! ----------
The image integrity check failed, your system was not restored
Contact Hatteland Display Product Support Services

---------- Warning! ----------
A problem was encountered restoring the factory drive image.
Contact Hatteland Display Product Support Services

HATTELAND®
DISPLAY

Declaration of Conformity

We, manufacturer

Hatteland Display AS
Åmsosen, N-5578 Nedre Vats, Norway

declare under our sole responsibility that the JH MMD, JH MMC, JH STD, JH MIL, HM NMD, HM MIL, HM CMD, HT STD, HD MMD, HM MMD & HT MMC product ranges is in conformity with the following standards in accordance with the EMC Directive.

Low Voltage Directive 2006/95/EC
EN 60950

EMC Directive 2004/108/EC
EN 55022 Class A
EN 55024

Signature:.....
Frode Grindheim
Vice President Product Management
Nedre Vats, Norway

Signature:.....
Arne Kristiansen
Site Manager - Test & Commission Division
Oslo, Norway

CE

CE MARK FIRST AFFIXED DATE (11 March 2010)

IND100237-1

Return Of Goods Information

Return of goods:

(Applies not to warranty/normal service/repair of products)

Hatteland Display referenced as “manufacturer” in this document.

Before returning goods, please contact your system supplier before sending anything directly to manufacturer. When you return products after loan, test, evaulation or products subject for credit, you must ensure that all accessories received from our warehouse is returned. This applies to cables, powermodules and additional equipment except screws or similar, user manual, datasheets or other written paper documents. Furthermore, the product must not have any minor / medium or severe scratches, chemical spills or similar on the backcover, front frame or glass.

This is needed to credit the invoice 100%. Missing parts will not be subject for credit, and you will not get total credit for returned product. You will either be charged separately or the amount is withdrawn from the credit. If you decide to ship the missing items on the after hand, you will get 100% credit for that particular invoice or items received at manufacturer incoming goods control. Please contact our service/sales department if additional questions

Approved packaging methods/materials:

(Applies to all shipments to manufacturer)

When returning goods, please make sure you surround the product with the following material, whenever possible: Original packaging from manufacturer, firm foam material, bubble wrap or lots of PadPack paper or Foam chips/polyester wrapped in sealed plastic bags. In any case, always use a solid cardboard box to surround everything.

Not approved packaging methods/materials are: Foam chips, expanded polyester, clothes, nothing, or too little, or anything that will crumble and get into the ventilation holes of products and cardboard boxes that are not suitable to secure the product during shipment.

Terms Of Sale And Delivery

1) APPLICATION
The terms of sale and delivery apply for Hatteland Display.

2) PRICE

a) The price is per each, if nothing else has been stated, VAT not included. Price is based on the prices from our suppliers, current custom rates, taxes, rate of exchange and international raw material prices. We reserve ourselves the rights to adjustments in case of alternation on the above mentioned.

b) Included in the price is the supplier's standard packing. In case of re-packing/smaller quantities we reserve ourselves the right to add an additional sum for warrantable packing according to CECC 0015 (Basic inspection for protection of electrostatic sensitive devices)

3) VALIDITY
If nothing else has been stated in our quotation, the offer is valid for 30 days from the date of quotation.

4) PACKAGE QUOTATION
A package quotation means that all the components offered, must be ordered by us. If one component or more are removed from the quotation, the prices given in the package quotation are not valid.

5) TERMS OF PAYMENT
Cash on delivery or payment in advance. Net granted for companies, schools and institutions only, according to agreement. In case of too late payment 1.5% interest/month will be charged. Seller has mortage rights in the goods delivered until the purchase price, additional interests and charges have been paid in full. Accepted bill is not considered as payment until it has been honoured in full.

6) TIME OF DELIVERY
The quoted time of delivery is based on information from our suppliers. We disclaim any responsibility for the consequences of any delay or cancellation from our suppliers. Belated delivery gives not solely the right for cancellation.

7) DELIVERY POINT OF TIME
Goods are considered delivered to customer when handed over to charterer.

8) FREIGHT / PACKING / FORWARDING FEE
Hatteland Display AS charge NOK 50,- in forwarding fee for orders below NOK 1000,-.
Freight charge according to expenses for orders above NOK 1000,-. VAT not included.

9) COMPLAINT
By receipt customer must check goods for obvious defects which have to be claimed within 8 days from receipt. Otherwise acceptance of complaint can not be counted on.

10) GUARANTEE / SERVICES
Time of guarantee is calculated from our date of shipment, and applies to the extent that we are covered by our supplier's guarantee regulations. The guarantee does no longer apply if:

I) there has been encroached upon the goods without seller's consent
II) terms of payment is not fulfilled
III) the goods have been damaged due to unskilled treatment
IV) components which are sensitive for static electricity have not been unpacked and treated in a secure way.

Minimum requirements: CECC 00015's standards for handling of such components. The guarantee does not include fair wear and tear.

11) RESPONSIBLITY
Seller undertake to deliver faultless and functional capable goods according to existing technical specifications. Seller disclaim responsibility for any damage or loss which directly or indirectly may be caused due to failure or defect with the delivered goods, if carelessness from the seller can be limited up to the cost of the goods. The supplier's responsibility for defects with the supplied goods do not include secondary damage or loss.

12) CANCELLATION / RETURN
Binding sales contract is concluded when we have confirmed customer's purchase order. Any disagreements in our order confirmation must be reported to seller within 6 days. The agreement can not be altered without our permission, after acceptance from our supplier. If goods are wanted to be returned, a Return No must be assigned from seller. Returned goods without a Return No will not be accepted. By return of stock listed goods, 20% return fee is charged. Returned goods are shipped on customer's account and risk.

13) LOAN, RENT and DEMO
When borrowing of goods for demo/test, the date of return must be added to the document. If no date has been stated, date of return is two weeks from the date of the document. Before return, seller must be contacted for a Return No (RTK). Goods which have been sold with an agreed right of return within stated terms, shall also have a Return No. The Return No must be obtained before the stated date of return. Returned goods without a Return No, or which have not been packed in original packing, will not be accepted.

14) LIMITATIONS
If any of our suppliers claim limited delivery terms towards us, our terms of delivery will be restricted according to those.

15) SOFTWARE
Sold or borrowed software is not allowed to be copied or spread in other ways, without a written permission.

16) RE-EXPORT
Goods delivered from seller may be subject to special rules of exportation in their supplier's native country. Buyer is responsible to obtain necessary permissions for further export/re-sale.

17) QUESTION IN DISPUTE
To settle any dispute the Karmsund Herredsrett is approved the legal venue.

INSTRUCTIONS FOR THE CONSIGNEE

1) CONTROL
Control the goods immediately by receipt. Examine the quantity towards the invoice/packinglist/shipping documents. Look for outward defects on the packing which may indicate damage on or loss of contents. Control the container and the seals for any defects.

2) SECURING EVIDENCE
When defects on the goods have been found, evidence must be secured, and seller must be informed. Call the transporter and point out the defects. Add a description of the defects on the goods receipt, the forwarder's copy of the way-bill or on the driving slip.

3) RESCUE
Bound the damage. Try to restrict the damage and the loss. Seller will compensate expences incurred due to reasonable security efforts in addition to damage and loss.

4) COMPLAINT
Write immediately a complaint to the transporter or his agent. Forward immediately the complaint to the transporter or his agent, and hold the transporter responsible for the defects. The complaint must be sent at the latest:

- for carriage by sea: within 3 days
- for overland / air transportation within 7 days

5) DOCUMENTATION
For any claims the following documentation is required, and must be forwared to the company or their agent: invoice, way-bill and/or bill of landing, and/or statement of arrival, inspection document, besides a copy of the letter of complaint to the transporter.

Notes

Revision History

Rev.	By	Date	Notes
1	JE SE	29 Mar 2011	1st release
2	SE	08 Apr 2011	Minor text changes throughout manual. Release for internet.
3	AK MM SE	16 Jun 2011	Added information/installation text for ferrites (page 5,16) Added note for DC power model (page 20) Revised drawing with DC model (page 34) Revised text for Recovery USB Media/Rescue Image (page 5,42)